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Author Guidelines

Scope:

Journal of Rangpur Medical College (JRMC) is the official organ of the Rangpur Medical College, Bangladesh and published twice in a year in the months of March and September. It is recognized by the Bangladesh Medical and Dental Council (BM & DC). The Journal publishes original articles, review articles, case reports and short communications related to various branches of medical sciences.

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   Mason J. Concepts in dental public health. Philadelphia: Lippincott Williams & Wilkins; 2005. **(single author & 1st edition)**
   Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, et al., editors. Harrison's principles of internal medicine. 17th ed. New York: McGraw Hill; 2008. **(more than 6 editors)**
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   Canada. Environmental Health Directorate. Radiation protection in dentistry: recommended safety procedures for the use of dental x-ray equipment. Safety Code 30. Ottawa: Ministry of Health; 2000. **(Government Document)**

2. **Chapter in an edited book/ eBook**

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   Pepi M, Tamborini G. Three-dimensional echocardiography. In: Sarti A, Lorini L, eds. Textbook of Echocardiography for Intensivists and Emergency Physicians. Springer; 2019:57-70. doi:10.1007/978-3-319-99891-6. **(Chapter from an eBook)**

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   Wheelis M. Investigating disease outbreaks under a protocol to the biological and toxin weapons convention. Emerg Infect Dis. 2000 Nov-Dec;6(6):595-600. doi: 10.3201/eid0606.000607. **(electronic Journal)**

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   European Space Agency. Rosetta: rendezvous with a comet.http://rosetta.esa.int [Accessed 15th June 2015].

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mechanics: proceedings of the International Symposium of the International Society for Rock Mechanics, EUROCK2006,9-12 May 2006, Liиge, Belgium. London: Taylor & Francis; 2006:27-29.

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Post-COVID 19 Waste management: Perspective in Bangladesh

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COVID- 19 is not only a pandemic but also now a global challenge in all aspects. Due to its high transmissibility, it causes an increasing number of newly infected patients, more hospitalizations, and more generation of healthcare solid waste materials. Moreover, the increase in the use of personal protective equipment (PPE) during the COVID-19 pandemic has added fuel to the flames in increasing medical solid waste. [1,2] This highly infectious disease can easily spread from contaminated waste materials. These extra waste materials are also linked to environmental consequences and challenges. Therefore, proper healthcare waste management (HWM) is a burning issue to halt the spread of Covid-19 as well as to maintain a healthy environment.[3-5]

Healthcare waste (HW):
Generally, the waste produced from healthcare facilities (HCFs), research centers, and medical laboratories are considered healthcare waste. Approximately 75–90% of healthcare solid waste is similar to waste generated in nonmedical settings and is thus categorized as 'non-hazardous' waste. The remaining 10–25% of waste is designated as 'hazardous waste', which poses serious environmental and health risks.[6]

Classification of Healthcare waste[7]:

A. Hazardous medical waste:

1. Chemical waste: Waste that contains chemical substances, i.e. laboratory reagents, film developing reagents, expired/unused disinfectants, solvents, and waste containing heavy metals (batteries, broken thermometers, etc.) is considered chemical healthcare waste.[6]
2. Infectious waste: Waste that contains infective pathogens for disease transmission is defined as infectious healthcare waste; it comprises materials contaminated with blood and body fluids, human excreta, laboratory cultures, and microbiological products.[8] PPE, i.e long-sleeved gowns, heavy-duty gloves, masks, goggles, boots, and face shields are also considered infectious waste.
3. Pathological waste: Pathological waste is typically a smaller part of any tissue, organ, or body part, taken from surgical or microbiological specimens from human bodies.[6] Basically, this type of waste is like infectious waste, and careful handling is required to manage it during a current pandemic.[8]
4. Radioactive waste: Radioactive wastes are produced from different nuclear technologies used in medical settings, including nuclear medicine, radiology, and reagents for research. These wastes contain radioactive materials such as unused reagents from the radiology department or laboratory. Radioactively contaminated glassware, packages/absorbent paper, and human excreta from patients treated or tested with radionuclides also include radioactive waste materials.[6]
5. Pharmaceutical waste: Pharmaceutical waste can be produced from pharmaceutical industries and drug storage within healthcare settings, i.e. pharmacies, distribution centers, and hospitals. Expired packages of pharmaceutical products are included as pharmaceutical waste.[6]

B. Non-hazardous healthcare waste:
Used plastic bags, bottles, paper, magazines, newspapers, food residue, and packets are considered non-hazardous healthcare solid waste.[9] It is probable that both asymptomatic and symptomatic COVID-19 patenAts generate a huge amount of non-hazardous SARS-CoV-2 contaminated healthcare waste during their daily activities in healthcare facilities, which poses a serious risk of community transmission.[10] C. Other waste: The test kits and waste

generated from different test procedures for COVID-19 is another new type of healthcare waste that has been generated in ample amounts in the current COVID-19 pandemic. The use of rapid test kits for identifying an infected person produces additional waste in the waste stream, as each kit is used only once. There is always a chance that this waste could be contaminated with the COVID-19 virus and contribute to further spread.[10]

Healthcare waste management (HWM) system at Covid-19 pandemic:

Considering the high infectivity of the Covid-19 waste and its huge amount, the Covid-19 HWM becomes overloaded and requires special measures. Therefore, the waste management capacity should also be increased at every stage.[11]

On-site separation and management:

In the Covid-19 pandemic, waste separation at the source is the most important to avoid multiple times handling of infected HW due to high infectivity.[11]

On-site disinfection, treatment, and disposal:

Considering the large amount of waste generated at the HCFs during the Covid-19 pandemic, on-site management including treatment and disposal has been preferred as per international guidelines.[11] According to these guidelines, the Covid-19 HW can be either treated and disposed of on-site or transported off the site for disposal after treatment at the HCFs.

Storage and transportation:

According to UNEP, considering the huge amount of HW generated during the Covid-19 situation, there should have a specific storage location in each HCFs to accumulate the Covid-19 waste at the source.[12]

Disposal:

According to both the Rules and Covid-19 guidelines in Bangladesh, the treated waste should be transported and disposed of in a specific sanitary dumping site, which is consistent with international guidelines.[13] According to UNEP, the Covid-19 MW should never be disposed of at open places at any point to prevent the harmful consequences on human health and the environment.[12]

Healthcare Waste(HW) facts in Bangladesh:

Before the COVID-19 era, the world was already in waste management challenges, where over two billion people lack access to waste collection whereas over three billion people lack access to waste disposal. Hence, the emergence of this pandemic and its corresponding social distancing measures amplify the already burdened sector.[14] Generally, the overall scenario of HW is alarming in Bangladesh due to the increasing number of HCFs generating a huge amount of HW.[15] Though Healthcare waste management (HWM)is a burning issue in a developing country like Bangladesh, policy, and initiatives in this sector are yet to be developed. The first HWM Rules of Bangladesh were declared in 2008. Some pits for disposal were constructed by 2009 and some Non-Government Organizations (NGOs) developed expertise and came forward in this area for proper HWM.[16,17] However, proper application of the Rules regarding the HWM system is yet to be established in Bangladesh.[18]In case of the collection of HW by waste collectors, it is often doneA in open vans, open drums, or garbage trucks, and also the vehicles used for transporting the waste are not instructed accordingly.[19,20] HW is frequently found in municipal dustbins. The openly dumped wastes are then picked up by waste scavengers. These activities increased the risk to the environment and the health of waste handlers as they do not use proper protective methods. For central treatment of HW, there is only one incinerator in Dhaka which is not sufficient even in normal situations. Thus, most of the HW remains untreated. Treated or untreated, these wastes are then dumped in landfills. Alarmingly, the landfills also do not have sufficient capacity.[17]

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Risk Factors of Hepatitis C Virus (HCV) Transmission among the HCV Infected Patients Admitted in a Tertiary Hospital of Bangladesh

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Abstract

Background:
Hepatitis C virus (HCV) is an important hepatotropic virus causing liver disease worldwide. Because there is no vaccine and no post-exposure prophylaxis for HCV, the focus of primary prevention efforts should be emphasized.

Objective:
The study was aimed to find out the risk factors of transmission of HCV among HCV-positive patients.

Methods:
In this observational study, a total of 30 HCV-positive indoor patients were included from the department of medicine and gastroenterology of Rangpur medical college hospital from July 2012 to June 2013 Over a period of 01 year.

Results:
The majority were male (86.7%), married (96.7%), in the age group 41-50 years (36.6%), resided in an urban area (66.6%). Regarding risk factor for HCV infection 16.7% had a history of risky sexual exposure, 3.3% was professional blood donor, 30% had a history of injury with contaminated instrument (needle stick/blade/lancet/others). 53.3% of patients had a history of blood & blood products transfusion. 76.7% studied patient shared their shaving razor. 23.3% of patient had CKD & was getting hemodialysis.

Conclusion:
As no vaccines are available for the prevention of HCV & treatment of HCV complications is difficult, the only way to control HCV is primary prevention by addressing the risk factors.

Keywords: Hepatitis C Virus, Risk Factors

Introduction:

Hepatitis C virus (HCV) is an important hepatotropic virus causing liver disease worldwide. The uncertainty about the geographic distribution of HCV infection and chronic hepatitis C, the determination of its risk factors of transmission & progression, underscore the difficulties in global prevention and control of HCV. HCV infection is endemic in most parts of the world, with an overall prevalence of 3%, representing approximately 170 to 200 million HCV-infected people world wide[1]. Because there is no vaccine and no post-exposure prophylaxis for HCV, the focus of primary prevention efforts should be emphasized. HCV infection is a potentially life-threatening condition, as many of the affected individuals progress to Cirrhosis and hepatocellular carcinoma (HCC).The true prevalence of Hepatitis C in Bangladesh is yet to be ascertained by a reliable large study. One prevalence study conducted by Mamun-Al-Mahtab et al. showed the prevalence of HCV positivity of 0.88%.[2] Another study found the prevalence of hepatitis C virus infection in the rural adult population was 0.6%.[3] The risk factors most frequently cited as accounting for the bulk of HCV transmission worldwide are blood transfusions from un-screened donors, injection drug use, unsafe therapeutic injections, and other health-care related procedures. The study was conducted to find out the risk factors of transmission of HCV among HCV-positive patients.

Methods:

In this observational study, 30 HCV-infected patients, admitted to the Department of Medicine and gastroenterology of Rangpur medical college

hospital from July 2012 to June 2013, were included by convenient sampling. HCV infection was diagnosed on the basis of anti-HCV antibody (IgG/IgM) positivity with or without positive HCV-RNA status. The particulars, history, physical and laboratory findings were recorded in a semi-structured predesigned data collection sheet. Statistical analysis was done using Statistical Packages for Social Sciences (SPSS), version 23.0 software for Windows. The qualitative variables were expressed in frequency and percentage and the quantitative variables in mean± Standard Deviation. Ethical clearance was obtained from the institutional review board (IRB) of Rangpur Medical College before the commencement of the study. Informed written consent was taken from the participants. Strict confidentiality was maintained throughout the study.

Results:

The socio-demographic characteristics of the study subjects were shown in table-I. The majority were male (86.7%), married (96.7%), in the age group 41-50 years (36.6%), resided in an urban area (66.6%), service holders (50%), and got at least primary education (80%).

Table-I: Socio-demographic characteristics of the participants (n=30)

Parameter	Number (Percentage)
Age group (Years)	
>18-30	2(6.6%)
31-40	8(26.6%)
41-50	11(36.6%)
51-60	8(26.6%)
>60	1(3.3%)
Age (Mean ± SD)	45.87 ± 10.40
Age range (Years)	20-65
Gender	
Male	26(86.7%)
Female	4(13.3%)
Marital status	
Married	29(96.7%)
Unmarried	1(3.3%)
Residence	
Rural	10(33.3%)
Urban	20(66.6%)
Level of education	
0-5 class	6(20.0%)
5-10 class	8(26.6%)
Undergraduate	5(16.7%)
Graduate and above	11(36.7%)
Occupation	
Housewife	3(10.0%)
Farmer	2(6.7%)
Service	15(50.0%)
Business	1(3.3%)
Unemployed	7(23.3%)
Others	2(6.7%)

Majority of the patient presented with anorexia (76.7%) and yellow coloration of the eye and urine (60%). The main clinical findings were jaundice 60% and stigmata of CLD were present in 60%. Features of hepatic encephalopathy were present in 6.6% (Table-II).

Table-II: Common clinical presentations of hepatitis C infected patients (n=30)

Clinical features	Frequency	Percentage
Anorexia	23	76.7%
Vomiting	13	43.3%
Abdominal pain	11	36.7%
H/O joint pain	10	33.3%
Yellow coloration of eye and urine	18	60.0%
Bodyache	11	36.7%
Vomiting of blood	04	13.3%
Anaemia	18	60.0%
Jaundice	18	60.0%
Skin rash	07	23.3%
Needle prick mark	04	13.3%
Scar mark	12	40.0%
Stigmata of CLD	18	60.0%
Hepatomegaly	06	20.0%
Splenomegaly	11	36.7%
Ascites	21	70.0%
Signs of encephalopathy	02	6.6%

Regarding risk factor for HCV infection 16.7% had a history of risky sexual exposure, 3.3% was professional blood donor, 30% had a history of injury with contaminated instrument (needle stick/blade/lancet/others). 53.3% of patients had a history of blood & blood products transfusion. 76.7% studied patient shared their shaving razor. 23.3% of patient had CKD & was getting hemodialysis (Table-III).

Table-III: Risk factors of HCV transmission in studied patients (n=30)

Risk factor	Frequency	Percentage
Blood transfusion	14	46.7%
Blood products transfusion	02	6.7%
Infusion history	18	60.0%
Professional blood donor	01	3.3%
History of sharing a razor	23	76.7%
Contaminated blade injury	03	10%
Other instrumented injury	06	20%
History of hemodialysis	07	23.3%
H/O Sexual exposure	05	16.7%
History of surgical procedure	13	43.3%
History of dental procedure	06	20%
History of HCV positive patients in family	00	00%
CKD	07	23.3%
HHA	01	3.3%

Among the studied patients, 36.7% had 4 mg/dl bilirubin, 80% had raised SGPT, 43.4% had raised alkaline phosphatase, 87.6% had low serum albumin, 70% had abnormal sonographic findings, and 67.7% had varices & gastropathy on upper GI endoscopy (Table-IV).

Table-IV: Investigation profile of HCV patients (n=30)

Parameters	Frequency	Percentage
S. bilirubin (mg/dl)		
<4	19	63.3%
4-10	08	26.7%
>10	03	10.0%
SGPT		
Normal	06	20.0%
<2 × normal	22	73.3%
>2 × normal	02	6.7%
Alkaline phosphatase		
Normal	17	56.7%
Raised <2 × normal	08	26.7%
Raised >2 × normal	05	16.7%
Prothrombin time		
Normal	09	30.0%
<4 seconds prolonged	11	36.7%
4-6 seconds prolonged	07	23.3%
>6 seconds prolonged	02	6.7%
S. Albumin		
Normal	03	10.0%
<2.8 gm/dl	26	86.7%
Alpha-fetoprotein		
<10 ng/ml	17	56.7%
10-400 ng/ml	02	6.7%
>400 ng/ml	02	6.7%
HCV RNA		
Not done	10	33.3%
Positive	20	66.7%
USG of HBS		
Normal	09	30.0%
High echogenicity	06	20.0%
Hepatomegaly	03	10.0%
Hepatomegaly due to SOL	02	6.67%
Shrinkage of liver	10	33.3%
Upper GI endoscopy		
Normal	10	33.3%
Gastropathy	06	20%
Varices	14	47.7%

Discussion:

In Bangladesh, HCV seropositivity among professional blood donors is 1.2% while in the voluntary donors is nil.[4] In another study, Anti-HCV was positive in 1.7% in acute viral hepatitis, 5.5% in sub-acute hepatic failure, 6.8% in post-transfusion hepatitis, 24.1% in chronic liver disease, 9.6% cases hepatocellular carcinoma.[5] HCV antibodies among clinically jaundiced patients were 2.5%,[6] healthy married women 0.9%,[7] 24.8% among injectable, and 5.8% in non-injectable drug users.[8] In another study 12.5% of thalassaemic children had HCV antibodies while the age-matched controls had only 0.9%.[9] There is limited data about the risk factors of HCV transmission in our country. This is a hospital-based study, patients of HCV admitted to the department of Medicine & Gastroenterology of Rangpur Medical College Hospital were studied to determine the risk factors of HCV transmission. In our study, the mean age of the study population was 45.87 ± 10.40 years. Many previous reports have shown mean age of the HCV patients was 37.6 ± 14.2 years (range: 1-87)[10] and 40.22±13.09 years.[11] Worldwide most of the HCV-affected patients were male. Alashek et al. has shown that two-thirds of the patients were males.[10] Jahanbakhsh et al. also found an almost similar result, in his study out of 11561 patients, 9645(83.4%) were male.[11] In our study 86.7% of the study populations were male. These findings may be due to wide exposure of the male to the different risk factors and the females are less exposed to doctors, particularly in developing countries. In Bangladesh, HCV seropositivity among professional blood donors is 1.2% while in the voluntary donors is nil.[4] In our study only 3.34% of patients was professional blood donor, whilst half of the patients were service holder, farmer, and housewife were less common. HCV is spread by direct contact with contaminated blood or blood products, especially among injecting drug users, contaminated needles and syringes are the most important vehicles of transmission. Transmission by household contact and sexual activity is low. Only a small percentage of HCV is transmitted at birth from mother to child. About 5% of infants born to HCV infected women become infected at the time of birth. If inadequately sterilized equipment is used, transmission via percutaneous procedures (e.g. ear, nose and body piercing, tattooing, circumcision) can occur. HCV cannot be transmitted via casual contact, coughing, sneezing, hugging, food or water sharing eating utensils.[12] In our study, the majority (43.33%) of the patients had multiple risk factors exposure, transfusion (53.4), and infusion history (60%) was the commonest along with other factors like surgical procedure (43.3%), hemodialysis (23.3%), dental procedure (20%), & risky sexual exposure (16.7%). 6.7% had a history of only sharing razors and 6.7% had only a history of contamination with a surgical instrument. 23.3% of my study people had CKD having hemodialysis. All patients having hemodialysis acquired HCV infection subsequently as they were negative for HCV during initiation of hemodialysis. So, proper sterilization of surgical & dialysis instruments and generation of awareness regarding sharing of razors, needles, and syringes may be important steps of prevention of transmission of HCV. HCV antibody among clinically jaundiced patients was 2.5%, healthy married women 0.9%, 24.8% among injectable, and 5.8% in non-injectable drug users.[8] In our study, 60% of patients had clinical jaundice. There are no symptoms in most cases of acute hepatitis C. The onset of the disease is usually insidious, with anorexia, vague abdominal discomfort, nausea and vomiting, fever and fatigue, progressing to jaundice in about 25% of patients, less frequent than hepatitis B. Rapid, fulminant liver failure associated with HCV infection is rare. Probably as many as 70-90% of infected people fail to clear the virus during the acute phase of the disease and become chronic carriers.[12] In our study majority of the patients presented with anorexia (76.7%) and yellow coloration of the eye and urine (60%). The main clinical findings were jaundice 60% and stigmata of CLD were present in patients. Report of alpha-fetoprotein was available in 70%(21) of the patients out of which 19%(4) patients having >10 ng/ml and HCV RNA was done in 66.7%(20) cases, all of them were positive. At the time of diagnosis, 70% of patients had sonological abnormalities of the liver ranging from high echogenicity (20%) to shrinkage of the liver (33.3%). This revealed the silent killer nature of HCV and more than two-thirds of the patients developed cirrhosis and/or hepatocellular carcinoma at the time of diagnosis. So prevention of HCV transmission should be the main step to protect from this killer disease.

Conclusion:

This hospital-based observational study was

carried out to study of risk factor stratification of hepatitis C virus-infected patients admitted in RpMC&H. As no vaccines are available for prevention of HCV & treatment of HCV complications is difficult, the only way to control HCV is primary prevention by addressing the risk factors. So, proper sterilization of surgical, dental, dialysis instruments and generation of awareness regarding risk factors like sharing of razor, needle, and syringes may be important steps of prevention of transmission of HCV.

Limitation:

As the population size was small, it was difficult to reach a definite conclusion and it may not reflect the exact picture. Large seroprevalence & risk factor assessment studies should be conducted in our country.

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Effects of Short Wave Diathermy (SWD) on the Patients with Chronic Non-Specific Low Back Pain

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Abstract

Background:
Chronic back pain is the second most common reason why patients visit primary care physicians and is the number one cause of disability in men aged 31 to 45. Chronic back pain is often resistant to treatment and patients are referred for multidisciplinary treatment.

Objective:
This randomized controlled trial study was aimed to see the effects of shortwave diathermy on patients with chronic non-specific low back pain.

Methods:
A total of 67 patients with chronic mechanical low back were randomly assigned to receive treatment in the Department of Physical Medical and Rehabilitation, BSMMU, Dhaka, during a period of 6 months from 1st July 2007 to 31st December 2007. The patient was divided into two groups; Group A and Group B. In group A (n = 32) the patients are treated with SWD, exercise therapy, oral NSAIDs, and ADL instructions for low back pain. In group B (n =35) the patients were treated with exercise therapy, oral NSAIDs, and ADL instructions for low back pain. The patients were treated for 6 weeks.

Results:
Of the 67 patients, 30(44.7%) were male and 37(55.3%) were female. The mean age was 41.22 ± 8.06 years in both sexes. 85.1% of patients were from urban areas. Immediate improvement (after 2 weeks) in more patients was reported in group A, i.e. with the shortwave diathermy group. After a complete course of 6 weeks, of treatment 71.87% of patients in group A and 65.7% of patients in group B reported improvement. Though both groups reported improvement better result was observed in group A, i.e. in the shortwave diathermy group.

Conclusion:
The combination of shortwave diathermy and exercise therapy is more effective than only exercise therapy in the management of chronic non-specific low back pain.

Keywords: Chronic non-specific low back pain, Shortwave diathermy.

Introduction:

Low back pain is a substantial health problem. It affects up to 80% of the adult population and accounts for considerable health care and socio-economic costs.[1] Chronic back pain is the second most common reason patients visit primary care physicians and is the number one cause of disability in men aged 31 to 45.[2] For non-specific low back pain symptoms, pathology and radiological appearances are poorly co-related. Pain is non-specific in about 85% of people.[3] The type of low back pain most commonly confronting the physiatrists (specialist in Physical Medicine and Rehabilitation) is of benign mechanical origin.[4] Chronic back pain is resistant to treatment and patients are often referred for multidisciplinary treatment.[5] Physical therapies including various exercise programs, traction, manipulation, massage,

TENS, thermotherapy are employed singly or in combination. In one survey of physiotherapy departments, SWD appeared to be the most popular therapy for non-specific L.B.P.[6] In this study an attempt has been made to see the effects of short wave diathermy in the treatment of chronic non-specific low back pain and their therapeutic outcome.

Methods:

This is a single-blind prospective randomized clinical trial study at the Department of Physical Medicine and Rehabilitation, BSMMU, Dhaka from 1st July 2007 to 31 December 2007 over a period of 06 months. During the study period, about 8475 patients with low back pain attended the outpatient department of Physical Medicine and Rehabilitation, BSMMU. Among them, 111 patients were initially selected and diagnosed as cases of chronic mechanical low back pain. Then they were randomly divided into two groups, group A and group B. 34(37.74%) patients were excluded due to some specific causes (lumbar spondylosis, spondylolysis, spondylolisthesis, sacralization, osteopenia, scoliosis from X-ray and in some high ESR). 77(85.47%) patients were found low back pain of chronic non-specific origin and included in this study and treatment was continued. In this study period among them, 67(74.37%) patients completed the study period and attended regularly. The other 10(11.1%) patients were excluded from the study due to irregular attendance and loss of contract. After the initial evaluation, clinical diagnosis of chronic low back pain and of mechanical type was established in pre-designed structured data collection sheets. Group A was given SWD, exercise therapy, NSAIDs, and ADL instructions and group B was given exercise therapy, NSAIDs, and ADL instructions for low back pain. After the treatment of the patients as scheduled, the patients were followed up weekly for six weeks and the outcome was recorded in the assessment data sheet weekly for six weeks. The pain and tenderness were measured by the Lattinen Score and Visual Analogue Score (VAS). Straight Leg Raising tests were performed in all patients weekly for six weeks. The data collections from all the cases were recorded under the specified datasheet. All results were expressed as mean ± standard deviation and the level of significance by P-value unless otherwise stated. $P < 0.05$ was considered as statistically significant. The nature of the study was described to the patients and verbal and written consent were taken. Ethical permission was taken from the Institutional review board of BSMMU.

Results:

Table-I showed the socio-demographic differences between the two groups. Among the 67 patients taken into the study, 30(44.7%) were male and 37(55.3%) were female. The mean age in group-A was 44.19±8.23 and in the group, B was 38.51±6.95. The majority of the patients were from urban 57(85.1%) and very few patients were from rural areas 10(14.9%).

Table-I: Socio-demographic characteristics of both groups (n=67)

Variable	Group A	Group B	Total
Sex			
Male	13(40.6%)	17(48.5%)	30(44.7%)
Female	19(59.4%)	18(51.5%)	37(55.3%)
Total	32(100.0%)	35(100.0%)	67(100.0%)
Age (Years)			
30-39	14(43.7%)	22(62.8%)	36(53.7%)
40-49	10(31.2%)	10(28.57%)	20(29.9%)
50-59	7(21.8%)	1(2.90%)	8(11.94%)
60-69	1(3.30%)	2(5.71%)	3(4.47%)
Total	32(100.0%)	35(100.0%)	67(100.0%)
Residence			
Urban	27(84.37%)	30(85.71%)	57(85.11%)
Rural	5(15.62%)	5(14.28%)	10(14.9%)
Total	32(100.0%)	35(100.0%)	67(100.0%)

After six weeks of treatment, 14 patients in group A and 8 patients in group B reported becoming painless. Symptomatic improvement was reported in 9 patients in group A and 15 patients in group B. After 6 weeks of treatment 6 patients in group A and 10 patients in group B were unchanged and 3 patients in group A and 2 patients in group B became worse. (Table-II)

Table-II: Number of patients with partial, complete relief of pain after 2, 4, and 6 weeks of treatment (n = 67)

	Treatments (weeks)					
	Group A (n = 32)			Group B (n =35)		
	After 2 weeks	After 4 weeks	After 6 weeks	After 2 weeks	After 4 weeks	After 6 weeks
Recovery No. Percentage (%)	2 (6.25%)	2 (6.25%)	14 (43.75%)	0	2 (5.71%)	8 (22.85%)
Improved No. Percentage (%)	10 (31.25%)	20 (62.50%)	9 (28.12%)	8 (22.85%)	11 (34.37%)	15 (42.85%)
Worse No. Percentage (%)	3 (9.37%)	3 (9.37%)	3 (9.37%)	2 (5.71%)	2 (5.71%)	2 (5.71%)
Unchanged No. Percentage (%)	17 (53.16%)	7 (21.87%)	6 (18.75%)	25 (71.42%)	20 (57.14%)	10 (28.57%)

In all 71.87% patients in group A i.e. with short-wave diathermy group and 65.7% patients in group B reported improvement after 6 weeks treatment (Table-III).

Table-III: Total number of patients reported improvement after 6 weeks treatment (n = 67)

Treatment	Number of patients	Percentage (%)
Group A (n=32)	23	71.87%
Group B (n = 35)	23	65.7%

Therapeutic outcome:

The outcome was dependent mostly on the intensity of pain. In this clinical trial, the pain intensity was the summation of lattinen test (score 20), tenderness index (score 4), and Visual Analogue Scale (score 10). At initial assessment (pretreatment- W0) the summation of pain intensity was considered highest. Then after starting therapy (Group A: SWD, exercises, NSAIDs, and ADL; Group B exercises, NSAIDs and ADL) every week's summation score was compared with the pretreatment summation score for six weeks.

Treatment response in Group-A:

Treatment responses in group A at different follow-up assessments were depicted in the table-IV below. The treatment response at each follow-up was compared with that of pretreatment scores (W–0).

Table-IV: Treatment response in Group A (n=32)

Outcome parameters (w=week)	Group–A Mean (±SD)	95% Confidence Interval of the Difference		p-value
		Lower	Upper	
W- 0 Summation score & W- 1 Score	14.63(±2.379) 13.25(±2.42)	0.820	1.930	0.00
W- 0 Summation score & W- 2 Score	14.63(±2.379) 11.09(±1.74)	2.728	4.335	0.00
W- 0 Summation score & W- 3 Score	14.63(±2.379) 10.53(±2.62)	3.444	4.744	0.00
W- 0 Summation score & W- 4 Score	14.63(±2.379) 9.53(±2.42)	4.359	5.828	0.00
W- 0 Summation score & W- 5 Score	14.63(±2.379) 8.66(±1.87)	5.142	6.795	0.00
W- 0 Summation score & W- 6 Score	14.63(±2.379) 8.41(±2.804)	0.540	5.117	0.00

Significant improvement ($p < 0.05$) in nearly every week's outcome was observed during the whole treatment period up to 6 weeks. This indicates that SWD, exercises, NSAIDs along ADL instructions are effective in the management of chronic nonspecific low back pain (Table-IV).

Treatment response in group-B:

In group B the treatment response at each week's follow-up was compared with that of pretreatment (W-O) score.

Significant improvement ($p < 0.05$) in nearly every week's outcome was observed during the whole treatment period up to 6 weeks. This indicates that exercise for low back pain, NSAIDs, and ADL instructions is effective in the treatment of chronic nonspecific low back pain (Table-V).

Comparative study between group-A and group-B:

The treatment responses of one group at each follow-up were compared with another group (Table-VI).

The difference of treatment improvement was statistically significant ($p<0.05$) from the 4th week up to the 6th week. This means group A patients were benefited more than group B patients (Table-VI).

Table-V: Treatment response in group B (n=35)

Outcome parameters (W=Week)	Group –B Mean(±SD)	95% Confidence Interval of the Difference		p-value
		Lower	Upper	
W-0 Summation score & W- 1 Score	14.86(±3.04) 13.17(±3.02)	1.181	2.191	0.00
W-0 Summation score & W- 2 Score	14.86(±3.04) 11.40(±3.16)	2.872	4.042	0.00
W-0 Summation score & W- 3 Score	14.86(±3.04) 11.34(±3.162)	2.684	4.345	0.00
W-0 Summation score & W- 4 Score	14.86(±3.04) 11.11(±3.08)	2.938	4.548	0.00
W-0 Summation score & W- 5 Score re	14.86(±3.04) 10.74(±3.59)	3.191	5.037	0.00
W-0 Summation score & W- 6 Score	14.86(±3.04) 10.40(±3.58)	3.422	5.492	0.00

Table-VI: Comparative treatment response between group A (n=32) and group B (n=35)

Outcome parameters (W=Week)	Group–A Mean (±SD)	Group-B Mean (±SD)	95% Confidence Interval of the Difference		p-value
			Lower	Upper	
Pre-treatment	14.63(±2.379)	14.86±3.04	-1.573	1.109	0.73
W- 1	13.25(±2.42)	13.17(±3.02)	-1.267	1.424	0.90
W- 2	11.09(±1.74)	11.40(±3.16)	.633	-1.570	0.63
W- 3	10.53(±2.62)	11.34(±3.16)	.714	-2.237	0.26
W- 4	9.53(±2.42)	11.11(±3.08)	.682	-2.945	0.02
W- 5	8.66(±1.87)	10.74(±3.59)	.710	-3.505	0.005
W- 6	8.41(±2.804)	10.40(±3.58)	.791	-3.574	0.01

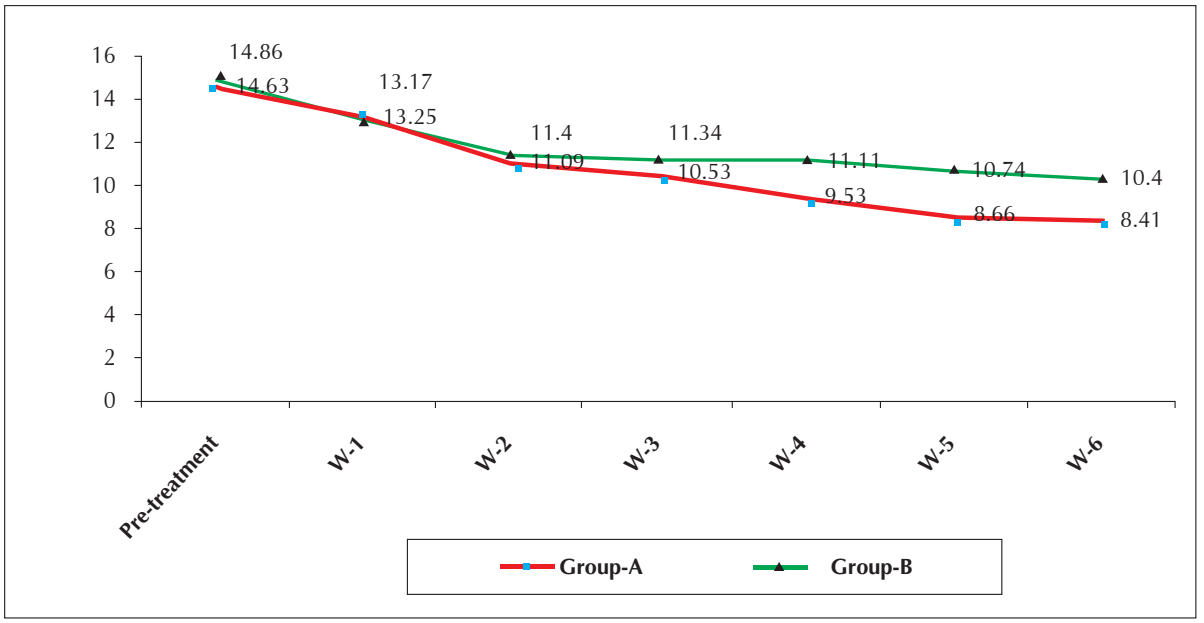


Figure-1: Comparative treatment improvement between group-A and group-B

Both groups reported improvement. But a better improvement was observed in Group A in comparison to Group B from the 4th week to the 6th week (Figure-1).

Discussion:

This randomized controlled trial was held from 1st July 2007 to 31st December 2007 in the outpatient and inpatient Department of Physical Medicine and Rehabilitation, BSMMU, Dhaka. Both men and women are equally affected by non-specific low back pain.[7] Kraus and Nazla[8] studied 12,000 patients where they found 48% patients were male and 52% were female and the male: female ratio was 1:1.08. In the present study, about 45% of patients were male and 55% of patients were female. But the large epidemiological studies found no statistically significant differences between the male and females. The majority of the patients (53%) were in the age group of 30-39 years and the next (30%) were in the age group of 40-49 years. Bendebba M[4] et al. found that the majority of patients with low back pain were in age between 35 and 45 years and the mean age were 44.8 ± 12.74 years. In a study conducted at IPGM&R, Dhaka Moyunuzzaman[7] et al showed that the mean age of the patients with low back pain was 35.47 ± 13.4 years. This study demonstrated partial or complete relief of pain in more patients who received shortwave diathermy than those who did not receive shortwave diathermy. 43.75% of patients in the short wave diathermy group and 22.85 % patients in the other groups reported becoming symptom-free after 6 weeks of treatment. In all 71.87% of patients in the shortwave group and 65.7% of patients in the other group reported improvements in their symptoms. Moyeenuzzaman M[7] et al found 73.33% in the shortwave diathermy group and 64.71% of patients in the exercise group reported improvement in their symptoms after 6 weeks of treatment. Ullan MA[9] et al found 77.77% of patients in the shortwave diathermy group and 78.94% patients in the exercise group showed improvement in their symptoms after 6 weeks of treatment. In current study confirm the superiority of group A (SWD + exercises + NSAIDs + ADL) over the group B (Exercises + NSAIDs + ADL). In this study after 4 weeks of treatment with the SWD group, 62.50% of patients were improved while SinakiM et al[10] found 66.66% improvement among the patients treated with shortwave diathermy. These findings are in agreement with the current study. Ullah MA[9] found 33.33% of patients in the shortwave diathermy group and 15.79% patients in the exercise group were improved after 2 weeks of treatment. Gibson T et al[6] reported a 20% improvement after treatment with shortwave diathermy. Worsening of symptoms occurred in 9.37% of patients who received shortwave diathermy (group A) and in the

other group (group B) 5.71% of patients reported worsening of symptoms.

Conclusion:

Chronic non-specific low back pain (CNSLBP) is a common cause of disability and is a frequent cause of loss of working hours among our people. The combination of shortwave diathermy and exercise therapy is more effective than only exercise therapy in the management of chronic non-specific low back pain. It needs verification by larger long-term follow-up studies.

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Original article

Effect of Tobacco Consumption on Serum Albumin and Bilirubin Levels Among the Smoker

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Abstract

Background:
The recent decades there has been a massive global increase in tobacco use. Tobacco consumption is a major preventable cause of premature mortality and morbidity. Immediate availability and the low price give rise to high consumption of tobacco smoking and causes alteration of liver function.

Objective:
To observe the effects of tobacco consumption on liver functions in smokers.

Methods:
The cross-sectional analytical study was conducted from January 2017 to January 2018 in the department of physiology, Rangpur Medical College, Rangpur. A total number of 60 subjects were selected, among them 30 were apparently healthy non-tobacco chewer non-smoker subjects as the control group (group A) and 30 were apparently healthy smoker non-tobacco chewer subjects (group B). The subjects were selected from a different area of Rangpur city. The effects of cigarette smoking on liver function were studied by measuring the levels of serum albumin and bilirubin. For statistical analysis independent sample "t" test was performed by computer-based software SPSS-17.0 version for windows.

Results:
Serum albumin and bilirubin levels were significantly lower ($p< 0.001$) in smoker non-tobacco chewer subjects as compared with the healthy control subjects.

Conclusion:
The decreased serum albumin and bilirubin levels in smoker non-tobacco chewer subjects were evidence of the development of liver function impairment due to tobacco smoking and this might offer a new approach to liver function impairment prevention in population with tobacco smoking.

Keywords: Tobacco smoker, Albumin, Bilirubin

Introduction:

Tobacco is a product prepared from the cured leaves of these plants. Tobacco contains the alkaloid nicotine, which is an extremely addictive drug.[1,2] In addition to nicotine, tobacco contains thousands of other chemicals such as cresol, pyrene, DDT, carbon monoxide, ammonia, hydrogen cyanide, acetone, methanol, formaldehyde, arsenic, cadmium, etc.[3,4] Dried tobacco leaves are mainly used in cigarettes, cigars, pipe tobacco, and flavored shisha tobacco for smoking. They can be also consumed as snuff, chewing tobacco, and dipping tobacco[1].

Smoking and smokeless tobacco items are the most commonly used tobacco products in Bangladesh.[4] Women usually used smokeless tobacco but rarely smoked or both.[4,5]

In Bangladesh, 43.3% of adults (41.3 million) use tobacco in smoking and or smokeless tobacco form. More than five million people die globally each year due to tobacco-related illness, the figure expected to increase to 8.3 million by 2030.[6]

Nowadays the adverse effects of smoking on liver function have gained more attention because it is a major cause of preventable

morbidity and mortality. Tobacco chewing and cigarette smoking are considered to be the most common particular risk factor for liver function disorder.[7,8]

Tobacco smoke contains over 4000 different chemicals, including nicotine, tar, and a gaseous compound including carbon monoxide which are highly cytotoxic potentials. It also contains various monoxide oxidants such as oxygen free radicals and volatile aldehydes which are probably the major causes of damage to biomolecules. Large numbers of free radicals are abundant in cigarette smoke that is capable of initiating or promoting oxidative injury. Cigarettes smokers are at greater risk for cardiovascular diseases, respiratory disorders, blindness, bone matrix loss, peptic ulcers, gastroesophageal reflux disease and hepatotoxicity, and cancer compared with non-smokers.[9]

Consumption of tobacco is now rapidly increasing all over the developing world and is one of the biggest threats to current and future world health. Bangladesh has been implementing surveys under Global Adult Tobacco Survey (GATS) since 2004 regularly at periodical intervals.[6] GATS uses the global standard protocol for systemically monitoring adult tobacco use (smoking and smokeless) and tracking key tobacco control indicators. GATS also provides the key for monitoring the MPOWER policy package developed by WHO which includes: Monitor tobacco use and prevention policies, protecting people from tobacco smoke, offering help to quit tobacco use, warning about the dangers of tobacco, enforcing bans on tobacco advertising, promotion and sponsorship and raise taxes on tobacco.[6]

According to the official Agricultural statistics, Jati, Motihari, and Virginia are the three varieties of tobacco grown in different parts of Bangladesh and among them, Rangpur still remains highest with 40,345 acres during 2008-2009.[10]

In smokers alteration of the relevant biochemical parameters may be an indicator of the onset of liver failure. Consumption of tobacco and smoking may be toxic and can impair liver function.[11,12] The liver functions are affected adversely in the smoker non-tobacco chewer group, indicated by the lower level of serum albumin, bilirubin.[13]

The purpose of this study was to assess the effect of tobacco on some hepatic parameters of smoker non-tobacco chewer subjects of the northern region because the rate of tobacco use is more among the people of this region. Adequate data on this kind of study is not available in our country. This study would increase awareness about the adverse effects of unjudicial tobacco use on the hepatic system.

Methods:

The Cross-sectional analytical study was conducted in the Department of physiology, Rangpur Medical College, Rangpur from January 2017 to December 2017. The Rangpur Medical College Ethical Committee and Thesis Protocol Review Committee approved the study protocol. A total number of 60 apparently healthy subjects of both sexes with age 30-45 years were divided into the following groups: Group A–30 apparently healthy non-tobacco chewer non-smoker subjects as the control group and Group B–30 apparently healthy smokers non-tobacco chewers. The subjects included in each group matched in their age and socio-economic condition. The duration of smoking is more than three years. All the subjects were free from a history of liver, heart, lung, and other chronic systemic diseases, obesity and diabetes mellitus, hypertension, pregnancy, and lactating mother. After the selection of subjects, the objectives, and the procedure of the study were explained written consent was taken. A standard questionnaire was filled out after taking history and thorough clinical examinations. On the first day, all the study procedures were maintained and advised the subjects were to be in an overnight (8-10 hrs) fasting state. Then attended the next day at 8.00 A.M. at the Department of Physiology, Rangpur Medical College, Rangpur. A fasting venous blood sample was collected from the antecubital vein from each subject under all aseptic precaution by a disposable syringe. The test tube containing blood was kept in a standing position till the formation of a clot. Serum was separated by centrifuging the blood at 3000 rpm for 5 minutes. The clear supernatant was taken and kept in ependroffs. All biochemical tests were carried out as early as possible and done by enzymatic colorimetric methods at the Department of Biochemistry, Rangpur Medical College, Rangpur. For statistical analysis independent sample "t'' test was performed by computer-based software spss-17.0 version for windows.

Results:
The mean ± SD of serum albumin was 4.8433 ± 0.33701 gm/dl in group A and 3.6267 ± 0.38411 gm/dl in group B. The mean ± SD of serum bilirubin was 0.6233 ± 0.14547 mg/dl in group A and 0.4433 ± 0.18511 mg/dl in group B. The mean serum albumin and bilirubin levels are significantly (p <0.01) lower in group B than A (Table-I).

Table-I: Showing mean ± SD serum albumin and bilirubin levels of the study subjects in group A and group B

Variable	Group A (n=30)	Group B (n=30)	p value
Serum albumin (gm/dl)	4.83 ± 0.33	3.62 ± 0.38	.000*
Serum bilirubin (mg/dl)	0.62 ± 0.14	0.44 ± 0.18	.000*

*= p<0.001
Normal range of serum albumin level is 3.4-5.0 gm/dl.[14]
Normal range of serum bilirubin level is 0.2-1.00 mg/dl.[15]

Discussion:
In this cross-sectional study, serum albumin and bilirubin levels were significantly lower in smoker non-tobacco chewer subjects than those of healthy control subjects which is comparable to others.[16,17] The literature review suggested several mechanisms for these changes of serum albumin and bilirubin levels in smoker non-tobacco chewer subjects. Lower levels of serum albumin and bilirubin in smoker non-tobacco chewer subjects might be due to tobacco-containing a hepatotoxic agent which causes intoxication of liver might be lead to impairment of liver functions. As a result, decreased synthesis of albumin in tobacco users. They also suggested that tobacco smoking and chewing are associated with increased oxidative stress. Albumin has antioxidant properties, through binding to copper ions and scavenging HOCL, then the oxidized albumin may be cleared rapidly from the circulation and degraded. So there is decreased albumin level in serum.[16] They suggested that the decrease in plasma albumin level might be due to reducing protein synthesis or increased proteolytic activity due to cigarette smoke exposure or via release of high levels of cellular oxidative free radicals could result in increased proteolytic activity.[13] Chronic smokers manifest evidence of increased oxidative stress and inflammation. They also showed several metabolites reflecting antioxidant capacity in chronic smokers. In one antioxidant system, an increase in heme degradation by haem oxygenase to biliverdin and bilirubin is a protective anti-inflammatory response to increased oxidative stress. Exposure to cigarette smoke is known to increase the expression of HO-1. Bilirubin might be acting as an antioxidant and reduce free radicals produced by cigarette smoking. Plasma metabolomic profiles lower serum albumin and bilirubin levels in smoker non-tobacco chewer subjects might be to tobacco smoking for a prolonged period of time which induced sustained rise of blood nicotine and also carboxyhemoglobin levels. Increased concentration of nicotine, carboxyhemoglobin, and free radicals might be because of impaired liver functions in tobacco smokers.

Conclusion:
In this present study, it has been concluded that lower serum albumin and bilirubin levels in smoker non-tobacco chewer subjects might be due to liver functions impairment in tobacco smoking for a prolonged period of time which induced sustained rise of blood nicotine level. But exact mechanism of lower serum albumin and bilirubin in this group of people could not be demonstrated. Estimation of serum nicotine levels, in the same study population with large sample size, may help us to know the mechanism of decreased serum albumin and bilirubin levels due to tobacco smoking. Reduction in tobacco consumption improves hepatic disorders and reduces mortality and morbidity in tobacco users.

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Original Article

Depression Literacy Among Post-graduate Medical Residents of a Tertiary Care Hospital in Dhaka, Bangladesh

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Abstract

Background:
Depression is a common, chronic, recurrent, treatable disorder that significantly hampers quality of life and linked to medical morbidity and mortality. Early detection of depression leads to its earlier and better care. Increased depression literacy among the post-graduate residents might play a vital role in the early detection and treatment.

Objectives:
This study aimed to look the depression literacy status and linkage between depression literacy and socio-demographic variables among the post-graduate medical residents.

Methods:
This cross sectional study was conducted among post-graduate medical residents in different faculties of Bangabandhu Sheikh Mujib Medical University. A probability proportionate sampling technique was applied to choose the number residents from each departments demented by the registered book. Socio-demographic variables were collected in a structured questionnaire and depression literacy was assessed by self-reporting D-Lit Bangla questionnaire of depression. Collected data were analyzed to estimate the mean score of depression literacy and 95% confidence intervals of D-Lit Bangla scores.

Results:
The mean score of the participants was 13.25. A statistically significant result on depression literacy was found in regards of sexes, family types, number of family members, faculties, psychiatric training outside of BSMMU of the residents. A good level of knowledge on depression symptomatology was found above 60% of residents but poor knowledge in psychotic symptoms where mean ranging from 22.7% to 47.6%. Poor correct responses were also found in impact of depression such as role of clinical psychologist (22.2%), sedative and addictive propensity of antidepressants (36.4% and 35%) and other treatment option (16.4%).

Conclusion:
The study revealed average literacy status among the residents of various disciplines of a tertiary care hospital, Bangladesh.

Keywords: Depression literacy, Mental health literacy, Post-graduate medical residents, D-Lit Bangla self-assessment questionnaire.

Introduction:

Depression is a clinical condition presents with persistent and pervasive sad mood, lack of pleasure in daily activities, sleep disturbance, changes in appetite, decrease energy, impaired attention concentration and memory, changes in psychomotor activity, inappropriate guilt feeling, suicidal thoughts and impaired daily function.[1, 2] Globally, more than 264 million people of all ages suffer from depression. Depression is a leading

cause of disability worldwide and is a major contributor to the overall global burden of diseases. In 2004, depressive disorders ranked the third cause of global burden of disease and by 2020, it became the second most burdensome disease across the world and will move into the first place by 2030.[2-4] Close to 800000 people die by suicide every year. Depression is a major contributor of suicide and many studies suggest that depression accounts about 60% of global suicide as a risk factor. [2,5,6] Due to adverse social circumstances, the incidence of depression is more common in females and the point prevalence of major depression ranges from 2.6% to 5.5% among men & 6.0% to 11.8% among women.[7] Worldwide possibility of developing depression is 7-12 % for men and 20-25% for women. These rates are independent of race, education, earnings, or social status.[3] At least 16.8% of the adult population and 13.6% of the children in Bangladesh suffer from mental disorders and 6.7% of adult populations have depressive disorder, revealed in the National Mental Health Survey of Bangladesh in 2018-19. Bangladesh is a very densely populous developing country in South Asia with gradual improvement in health literacy (HL) but the actual condition is very poor.[8,9] The prevalence of depression is about 4.6% in Bangladesh and a good literacy in depression would be needed to combat the burden of the disorder.[2,10] Depression typically starts in the age of early mid-20s; it follows a relapsing recurrent course and causes substantial impairments in multiple domains of life. As an episodic recurrent illness, literacy regarding depression has an important role in treatment as well as improving the quality of life and low mental health literacy (MHL) is associated with depression in adolescent age.[2,11] Literacy is generally mean the ability to read and write, while a 'literate person' is someone 'who can with understanding both read and write a short simple statement on his everyday life'.[12] Health literacy (HL) was introduced first in 1974 and subsequently it has gained admiration in global research.[13,14] HL refer to individuals' ability to locate, understand and use information for health-related decisions and to make 'appropriate health decisions'.[15] HL has been considered as a fundamental element of patient-centered healthcare system and plays a important role in the identification of disorders, seeking help, initiatives to prevent, compliance of medication.[14,16] MHL is described as the possession of knowledge and beliefs which facilitate the recognition, management and prevention of mental disorders.[17] MHL is associated with help-seeking practices that highlight the need for examining and improving the depression literacy of medical post-graduates due to their high rates of depression and low rates of mental health related help-seeking behaviors. Enhanced understanding of MHL, development of appropriate interventions and self-evaluation measurement tools help to achieve improvements of mental health outcomes in the future.[18] MHL reduces stigma, increases help seeking behaviors and recognizing the symptoms among post graduate residents.[19] Depression literacy (D-Lit) is a disorder specific MHL, essential requirement to combat the disorder and can be defined as the ability to identify depressive symptoms and to make informed decisions regarding treatment during emergencies. Repeated evidences indicate that poor depression literacy among general population affects identification, need for treatment, help-seeking behavior, treatment, compliance to the antidepressants.[20,21] Unfortunately, a majority of MHL studies concerning depression literacy of post-graduates done in developed western countries, resulting in limited understanding of this area in developing and non-western countries. Between 76% and 85% of people in low and middle income countries receive no treatment for depression. Depression Literacy Program is effective in increasing depression comparative study reported that D-Lit was the highest among the medical graduates (D-Lit mean: 11.19), followed by chronically ill patients, university graduates and depressed patients in Bangladesh.[9,14] A study revealed poor literacy status in recognition psychotic symptoms of depression as well as the treatment aspects of depression in first year university students of Bangladesh where the mean D-Lit score was 6.55.[23] As far researcher knowledge there is no research conducted regarding D-Lit status among post-graduate medical students in Bangladesh. So this study aimed to assess the depression literacy among post graduate residents and recommend necessary steps to enhance literacy on depression.

Methods:

This was a cross-sectional descriptive study carried

out in Department of Psychiatry, BSMMU, Dhaka during the period from May 2019 to October 2019 among post-graduate residents under Medicine, Pediatrics, Surgery, Basic Science & Para Clinical Science faculties of BSMMU. Probability Proportionate sampling size technique was applied to determine the number of sample from each particular department documented in registrar book. Then purposive convenient sampling technique was applied to achieve the proportionate size of participants from each discipline considering the residents phases & gender. Calculated Sample size was 380, among them 225 residents who fulfilled the inclusion criteria was taken as sample. FCPS, M.Phil, Diploma doctors, Dentistry residents and foreign residents studying at BSMMU were excluded. Before commencement of this study, ethical approval was taken from ethical committee and informed written consent was taken from all participants. Ethical aspects were strictly maintained in all the procedures. Prior to the study pretesting was carried out among 10% of the total study population to test the applicability & feasibility of the research instruments. Necessary socio-demographic variables of responders were taken using a structured questionnaire and Depression literacy assessed by a self-reporting D-Lit Bangla structured questionnaire of depression. All collected data was repeatedly checked & rechecked for omission, inconsistencies & improbabilities. Data analysis was performed by using Statistical Package of Social Science version 22. Data were analyzed to estimate the mean score and 95% confidence intervals of D-Lit Bangla scores.

Results:

Among the 225 respondents, 58.2% were male and 41.8% were female. Most of respondents were within the age 30 to 35 years (53.3%), 87.1% were belonging to religion of Islam and 12.9% were Hindu. Most of them were married (82.7%) and unmarried were 17.3%, about 56% of participants lived in nuclear family and 44% in extended family. Monthly income ranged from 40000 to 50000 BDT for 37.3% and above 50000 BDT for 44% of residents and income source included 62.7% from government salary, 29.3% from residency allowance and 1.8% from private practice. About 45.3% of residents had family history of depression and 63.6% of residents suffered from depression during lifetime. (Table-I)

Table-I: Distribution of socio-demographic variables of the respondents (n= 225)

Variable	Sub-population	Frequency (Percentage)
Sex	Male	131(58.2)
	Female	94(41.8)
Age (Years)	<30	80(35.6)
	30 To 35	120(53.3)
	>35	25(11.1)
Religion	Islam	196(87.1)
	Hinduism	29(12.9)
Marital status	Married	186(82.7)
	Unmarried	39(17.3)
Family members	2 to 4	91(40.4)
	5 to 6	89(39.6)
	>6	45(20)
Family type	Nuclear	126(56)
	Extended	99(44)
Income source	Government Salary	141(62.7)
	Residency allowance	66(29.3)
	Private Practice or Others	4(1.8)
Monthly income (Taka)	<40000	42(18.7)
	40000-50000	86(37.3)
	>50000	99(44)
Family history of depression	Yes	102(45.3)
	No	123(54.7)
Self-depression history	Yes	143(63.6)
	No	82(36.4)

Mean literacy among male and female were 13.61 and 12.75 respectively. Depression literacy found statistically insignificant regarding sex (p= .24), age (p= .47), religion (p= .35), marital status (p= .28) and monthly income (p= .16). Mean depression literacy was 13.73 in nuclear family and 12.63 in extended family that was statistically significant (p= .04). Depression literacy also found statistically significant regarding number of family members (p= .01), where mean literacy 13.89 among residents having 2-4 family members, 13.10 among residents having 5-6 members and 12.26 among residents having more than 6 family members (Table-II).

Table-II: Association between socio-demographic and depression literacy of the respondents

Variable	Depression literacy status n (%)				p-value
	Very low score group (=<5)	Low score group (>5 to 10)	Moderate score group (>10 to 15)	High score group (>15)	
Age (Years)					
<30	0(0.0)	13(16.3)	51(63.8)	16(20.0)	
30-35	3(2.5)	16(13.3)	76(63.3)	25(20.8)	.47
>35	0(0.0)	5(20.0)	12(48.0)	8(32.0)	
Sex					
Male	1(.8)	16(12)	81(61.8)	33(25.2)	.24
Female	2(2.1)	18(19.1)	58(61.7)	16(17)	
Religion					
Muslim	3(1.5)	32(16.3)	121(61.7)	40(20.4)	.35
Hindu	0(.0)	2(6.9)	18(62.1)	9(31)	
Marital status					
Unmarried	0(.0)	3(7.7)	29(74.4)	7(17.9)	.28
Married	3(1.6)	31(16.7)	110(59.1)	42(22.6)	
Main income					
Govt. salary	0(.0)	22(15.6)	90(63.8)	29(20.6)	
Residency allowance	3(4.5)	9(13.6)	38(57.6)	16(24.2)	.42
Private practice or others	0(.0)	3(18.8)	11(55.5)	4(35.6)	
Family type					
Nuclear	0(.0)	14(11.1)	81(64.3)	31(24.6)	.04
Extended	3(3)	20(20.2)	58(58.3)	18(18.2)	
No. of Family member					
2-4	0(.0)	9(9.9)	59(64.8)	23(25.3)	
5-6	0(.0)	16(18)	54(60.7)	19(21.3)	.01
>6	3(6.7)	9(20)	26(57.8)	7(15.6)	
Monthly income (Taka)					
<40000	0(.0)	6(14.3)	26(61.9)	10(23.8)	
40000-50000	0(.0)	8(9.5)	54(64.3)	22(26.2)	.16
>50000	3(3)	20(20.2)	59(59.6)	17(17.2)	
Family history of depression					
Yes	2(2)	19(18.6)	62(60.8)	19(18.6)	.40
No	1(1.8)	15(12.2)	77(62.6)	30(24.4)	
Depression self					
Yes	1(1.7)	23(16.1)	92(62.4)	27(18.9)	.34
No	2(2.4)	11(13.4)	47(57.3)	22(26.8)	

Among the respondents 38.2% were from medicine, 37.3% from surgery, 10.7% from pediatrics and 13.8% from basic science & para-clinical faculties. Mean depression literacy in Medicine found higher than other faculties and was statistically significant (p= .028). Participants were 52% in phase A and 48% in phase B and mean literacy difference between two phase was statistically significant (p= .004). About 62.2% residents had psychiatric training outside BSMMU and 37.3% residents had no training outside BSMMU and the mean literacy difference between two groups was highly significant (p= <.001). Among respondents 83.65% had no BSMMU psychiatric placement and 16.4% had scheduled placement; mean score difference was highly significant of these groups (p= < .001)(Table-III).

Table-III: Relation between academic variables and depression literacy of respondents

Variable	Depression literacy status: n (%)				p-value
	Very low score group (=<5)	Low score group (>5 to 10)	Moderate score group (>10 to 15)	High score group (> 15)	
Faculty					
Medicine	2(2.3)	6(7)	51(59.3)	27(31.4)	.028
Surgery	1(1.2)	13(15.5)	55(65.5)	15(17.9)	
Pediatrics	0(.0)	5(20.8)	15(62.5)	4(16.7)	
Basic science & para clinical	0(0.0)	10(32.3)	18(58.1)	3(9.7)	
Phase					
Phase A	2(1.7)	13(11.1)	85(72.6)	17(14.5)	.004
Phase B	1(.9)	21(19.4)	54(50)	32(29.6)	
Psychiatry placement (BSMMU)					
Yes	1(2.7)	3(8.1)	16(43.2)	17(45.9)	<.001
No	2(1.1)	31(16.5)	123(65.4)	32(17)	
Psychiatry training outside					
Yes	2(2.4)	6(7.1)	43(51.2)	33(39.3)	<.001
No	1(.7)	28(19.9)	96(68.1)	16(11.3)	

Depression:
literacy in residents from psychiatry department and non-psychiatric residents placed in psychiatry department were 16.36 vs 13.65 showed significant difference (p= .032) (Table-IV).

Table-IV: Mean±SD distribution of depression literacy scores between Psychiatry and non-Psychiatry residents who completed psychiatry placement at BSSMU

Characteristics	N	Mean	T	P
Psychiatry residents	14	16.36±4.22	2.24	0.032
Non-psychiatry residents	23	13.65±3.11		

Total D-Lit score was calculated by summing the scores of 20 items where the score ranged from 0-20. The mean (±SD) D-Lit score was 13.25 (±3.11) and the mean score was slightly higher in males (13.61) than in females (12.75). The total correct response of most of the residents was in between 10-15 (Figure-1).

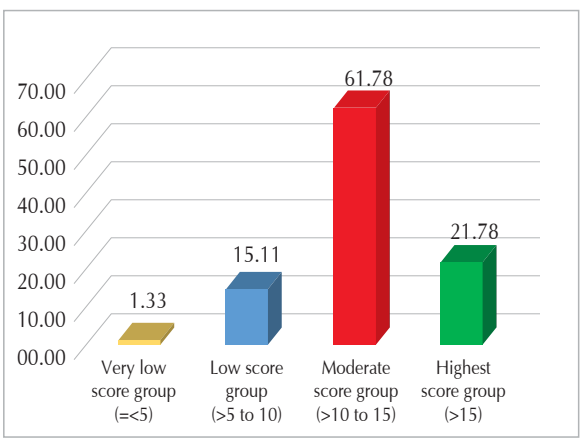


Figure-1: Depression literacy status of the respondents in percentage

The respondents had good knowledge on multiple domains of symptoms of depression except psychotic domain where they revealed poor literacy status i.e. reckless behavior (24.9%), irrelevant speech (22.7%), and auditory hallucination (47.6%). Literacy status on biological symptoms revealed correct responses ranging from 90.7% to 95.1%, cognitive symptoms from 80.9% to 96.9%

and impact of depression from 60.4% to 93.8%. Correct responses on management of depression revealed lower status such as role of psychologist in giving medication for depression by 22.2%, other treatment options better than antidepressants by 16.4%, sedative property of antidepressants by 36.4%, addictive propensity of antidepressants by 64.4%, role of vitamin in management of depression by 65.3%, onset of antidepressants action by 87.1%, stopping moment of antidepressants by 78.2%, role of counseling in mild to moderate depression by 81.3% of respondents (Table-V).

Table-V: Distribution of depression literacy parameters among respondents (n=225)

Parameters	Response		
	Correct n (%)	Incorrect n (%)	Don't Know n (%)
Cognitive symptoms			
Q.2 Guilt feelings	207(92)	8(3.6)	10(4.4)
Q.4 Low self esteem	218(96.9)	1(.4)	6(2.7)
Q.8Attention & Memory	182(80.9)	39(17.30	4(1.8)
Psychotic symptoms			
Q.5 Hallucination	107(47.6)	57(25.3)	61(27.1)
Q.1 Irrelevant Speech	51(22.7)	138(61.3)	36(16)
Q.3 Reckless behavior	56(24.9)	124(55.1)	45(20)
Biological symptoms			
Q.6 Hypersomnia or Insomnia	214(95.1)	4(1.8)	7(3.1)
Q.7Hyperphagia or Anorexia	204(90.7)	10(4.4)	11(4.90
Behavioral symptoms			
Q.9 Psychomotor retardation or agitation	193(85.8)	11(4.9)	21(9.3)
Impact of depression			
Q. 11 Moderate depression affects like asthma & deafness	136(60.4)	34(15.1)	55(24.4)
Q. 12 Often needs hospitalization	199(88.4)	8(3.6)	18(8)
Q.13 Famous people suffered depression	211(93.8)	14(6.2)	225(100)
Management			
Q.10 Clinical Psychologist medication	50(22.2)	161(71.6)	14(6.2)
Q.20 All ant-depressants are sedative	82(36.4)	110(48.9)	33(14.7)
Q.14 Other Rx better then drugs	37(16.4)	130(57.8)	58(25.8)
Q. 15 Mild to Moderate depression counselling	183(81.3)	14(6.2)	28(12.4)
Q.16 Vitamin supplement most effective	147(65.3)	16(7.1)	62(27.6)
Q. 17 Should stop drug immediately	176(78.2)	6(2.7)	43(19.1)
Q. 18 Anti-depressants are addictive	145(64.4)	40(17.8)	40(17.8)
Q. 19 Anti- depressants works immediately	196(87.1)	4(1.8)	25(11.1)

When socio-demographic and academic factors were tested against depression literacy scores of the respondents among variables, family history of depression, number of family members and psychiatry training status were observed to significantly predict the target variable ($p < 0.05$). According to regression analysis, family history of depression of the respondents had a negative influence on their literacy scores. When other variables were held constant, respondents had family history of depression obtained 0.747 unit less scores compared to those who had no family history depression ($p = .082$). Doctors who belonged to the placement at BSMMU showed 0.921 unit more literacy scores than those of who hadn't ($p=0.11$). Trained doctors achieved 1.68 unit scores higher than untrained counterparts, when other variables were assumed constant ($p<.001$) showed positive correlation. Doctors belonging to families comprising more than 6 individuals had 1.72 unit lesser depression related literacy than doctors with family members between 2 to 4 ($p = .039$) showed negative correlation (Table-VI).

Table-VI: Correlation of socio-demographic and related factors towards the depression literacy scores of respondents

Model	Unstandardized Coefficients		Standardized Coefficients	T	p-value
	Beta	Std.Error	Beta		
(Constant)	13.171	.878		15.008	.000
Age (Years)					
30 to 35 vs below 35	.275	.460	.044	.597	.551
Age above 35 vs below 35	1.012	.713	.102	1.420	.157
Sex					
Female vs male	-.390	.426	-.062	-.915	.361
Religion					
Hinduism vs Islam	.278	.603	.030	.461	.646
Phase					
Phase B vs Phase A	.359	.418	.058	.859	.391
Family type					
Extended Vs Nuclear	.099	.633	.016	.157	.875
Family history of depression					
Yes vs No	-.747	.428	-.120	-1.747	.082
Self-depression history					
Yes vs No	.021	.441	.003	.047	.963
Psychiatry placement (BSMMU)					
Yes vs No	.921	.587	.110	1.569	.118
Psychiatry training outside					
Yes vs No	1.676	.437	.261	3.835	.000
Marital status					
Married vs unmarried	.702	.562	.085	1.249	.213
Income source					
Residency allowance Vs govt. job	-.157	.456	-.023	-.344	.731
Private source of Income vs govt. job	.768	1.504	.033	.511	.610
Faculty					
Surgery vs medicine	-.284	.479	-.044	-.593	.554
Pediatrics vs medicine	-.672	.719	-.067	-.935	.351
Basic science vs medicine	-1.034	.664	-.115	-1.556	.121
No. of family member					
5 to 6 vs 2 to 4	-.832	.587	-.131	-1.418	.158
Above 6 vs 2 to 4	-1.716	.825	-.221	-2.079	.039
Monthly Income (BDT)					
Above 50000 BDT vs below 40000 BDT	.467	.440	.073	1.061	.290

Discussion:

Health literacy is thought to be a core element of patient-centered healthcare services system. Poor health literacy affects all aspect of health and it has important role in identification of disorders, seeking help for emergencies, formulating strategies to prevent, adherence to the medications and so forth. This study revealed good depression literacy status in recognition of symptoms of depression except the psychotic symptoms and management of depression. The mean D-Lit score was 13.25 with significant difference among residents who have placement in psychiatry department and who attend psychiatric training outside of BSMMU. Previous comparative observation revealed the depression literacy status among undergraduate medical graduates (D-Lit mean: 11.19). The mean score of those respondents measured by same instrument having same range of 0-20.[14] The current mean is higher than the mean of D-Lit from previous study in the same country. A study in India revealed the mean D-Lit score 13.21 (min = 6, max = 19), vis-a-vis the mean D-Lit score of the current study was 6.55 (min=0, max=12) which indicates the poorer D-Lit status among the current study respondents with higher depression literacy in females and it was positively associated with treatment compliance.[20] Current study revealed opposite pattern of D-Lit on the basis of gender. The mean D-Lit score of that study was 13.21 (min=6, max=19), those were little lower than the current study with opposite gender.Among the undergraduate students in Sri Lanka, the ability to recognize depression was found to be low.[17] In China, about 12% respondents were able to recognize depression.[4] among Iran medical students, 35.6% of students mentioned the correct answer in recognition of the disorder and 64.3% gave positive answer in help-seeking area. The majority of affected students sought for help from their friends and parents and stigma was the greatest barrier for seeking help.[24] These differences can be explained by the different set-up of study, different instruments, cultural construct and educational status of the respondents, educational system and the existing health promotional activities in the context.D-Lit status found better in Medicine faculty than other faculties and the mean difference was statistically significant (p= .028). This may be due to much importance given of psychiatry in Medicine faculty academic curriculum than other faculties. D-Lit of phase-B residents found better than phase-A revealed statistically significant difference (p= .004), probably due to rotation placement in psychiatry department of other departments often placed in their phase-B schedule. Residents of other departments had placed in psychiatry department showed statistically significant higher D-Lit than who never placed (p< .001). Residents previously attended psychiatric training outside BSMMU shown better literacy than whom never attended which also statistically very significant (p< .001).But the reason behind higher depression literacy found in residents of nuclear families and residents with less family members (2-4 member) is unclear; though both variables were found statistically significant (p= .04 & p=.01). Over 90% residents responded correctly with biological symptoms; over 85% with behavioral symptoms and over 80% with cognitive symptoms of depression. Correct response ranges only 22-47% regarding psychotic symptoms of depression, and 16.4-87.1% regarding management of depression and side effects of anti-depressants. This indicated huge knowledge gap of residents in these parameters.

Conclusion:

The study revealed average literacy status (mean literacy 13.25). Depression literacy is a vital part to treat depression appropriately. This study exposed the status of depression literacy in multi-disciplinary groups of post-graduate medical residents of a highest tertiary care hospital in Bangladesh. A good proportion of residents (19.2 %) refused to take part in the study. Getting target amount of phase A and phase B residents at a time of a discipline and time matching between researcher and respondents was difficult. Responding to translated Bengali medical jargons questionnaire for Bengali speaking residents were uneasy and difficult to understand. However, adequate strategies should be focused to improve the depression literacy both in undergraduate and post-graduation curriculum to reduce the burden of depression. Further, large scale, multi-centered and interventional studies are necessary to find out the cause-effect relationship.

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Original Article

Outcome of Transcanalicular Laser Dacryocystorhinostomy in Different Age Groups - A Prospective Study in Rangpur Medical College Hospital

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Abstract

Background:
Dacryocystorhinostomy (DCR) is the treatment of choice for Chronic Dacryocystitis. Although external DCR surgery is still regarded as the gold standard for acquired nasolacrimal duct obstruction, due to short surgery time and relative bloodless operation, transcanalicular diode laser DCR is evolving as an equally effective alternative treatment in the recent past.

Objective:
To assess the prognostic value of age on the outcome of transcanalicular diode laser DCR in patients with acquired nasolacrimal duct obstruction.

Methods:
This hospital-based prospective and longitudinal study was conducted in the Department of Ophthalmology in Rangpur Medical College Hospital (RpMCH) from July 2018 to March 2020. 100 patients, 47 males, and 53 females were treated with transcanalicular laser-assisted DCR without intubation for NLDO. The patients were divided in four age groups <30 years (10%), 31-40 years (36%), 41-50years(20%) and >50 years(34%).The inclusion criteria included primary NLDO and failed External DCR. The exclusion criteria included common canalicular obstruction, lacrimal pump failure, acute dacryocystitis, mucocele, nasal polyps, and gross nasal septal deviation Follow-up examinations were done after 1 week, 6 weeks, 12weeks, and 24 weeks after surgery. Surgical success was defined as resolution of symptoms (epiphora or discharge) and unobstructed lacrimal irrigation.

Results:
Among 100 patients, 47 males and 53 females. The mean age was 48.87 years, ranging from 18 to 85 years. The majority of patients (36%) were aged 31-40 years. At first follow-up patients of all age group shows patent SPT (success rate 100%). At final follow-up (after 24 week) success rate was high (88%)in age group >50 years,($p< 0.05$) which is statistically significant.

Conclusion:
As this study showed that the older patients experienced better transcanalicular diode laser-assisted dacryocystorhinostomy results than the younger patients Transcanalicular Laser Dacryocystorhinostomy is a better option for elderly patients with epiphora. The diminished inflammatory response in the older population may be a possible contributing factor to these results.

Keywords: Dacryocystorhinostomy, Laser DCR, Transcanalicular Laser DCR

Introduction:

Chronic dacryocystitis is an inflammatory condition of the lacrimal sac most commonly associated with partial or complete obstruction of the nasolacrimal duct.[1] Most chronic dacryocystitis presents with watering and discharge but some cases may progress and cause severe ocular and extraocular complications. These include orbital cellulitis, formation of lacrimal fistulas, meningitis, brain abscess formation, cavernous sinus thrombo-

sis, severe sinusitis, permanent loss of vision, and even death.[2] Dacryocystorhinostomy (DCR) is the mainstay treatment for epiphora resulting from nasolacrimal duct obstruction.[3] Dacryocystorhinostomy (DCR) means the creation of anastomosis for direct communication between the lacrimal sac and the nasal cavity through a bony ostium and thus reestablish lacrimal outflow by creating a bypass into the nasal cavity.[4] There are different surgical techniques available for DCR. These include external DCR, nonmechanical laser DCR, endonasal laser DCR and transcanalicular laser-assisted DCR.[5] External DCR has been a successful surgery in the treatment of NLDOs (Naso Lacrimal Duct Obstructions) since 1724.[6] Modern external DCR was introduced by Ohm in 1920 where he created both anterior and posterior lacrimal and nasal flaps and sutured them together6. This technique was subsequently popularized by Dupuy-Dutemps and Bourguel.[7] Despite the popularity of External surgical DCR, it has many complications like prolonged surgical time, unpredictable bleeding, and external scar.[1-8] The first endonasal DCR was described by Coldwell in 1893[6] when a metal probe was passed through the canaliculus into the lacrimal sac down into the nasolacrimal duct. An electric burr was then used to create an opening through the bone and nasal mucous membrane until the probe can pass freely into the nasal cavity. The popularity of this approach increased in the 1970s and 1980s. There was a major limitation to the endonasal approach due to limited visibility from poor illumination and bleeding of the nasal mucosa.[9] In 1989 McDonough and Meiring first introduced endoscopic endolaser DCR that helped revive interest in endoscopic technique.[10] Inadvertent exposure of the nasolacrimal duct during endoscopic nasal surgery gave them the idea of introducing a rigid Storz Hopkins Rodlens endolens with a 30 viewing angle for endoscopic DCR.[10] Alternative techniques such as transcanalicular diode laser DCR are gaining popularity due to the innovation of high-resolution fiber-optic endoscopes which yield high-quality images. The success rate of such laser-based transcanalicular DCR (46% - 100%) is approaching that of external DCR (>90).[1-5] Transcanalicular laser-assisted DCR can be done under local anesthesia, involves precise cutting and removal of tissue by ablative procedure, is bloodless, less time consuming, leaves no external scars, can be repeated, preserves ligaments and muscles of the internal canthus, and preserves lacrimal pump function.[1-5] Over the years lasers with different wavelengths have been used to perform an osteotomy. We used the transcanalicular approach because of its better success rate and it allows direct application of the laser to the obstructed site.[11,12] Here we present our experience of transcanalicular laser-assisted DCR without intubation in different age groups in 100 patients using a 980 nm diode laser in the Ophthalmology department of Rangpur Medical College Hospital.

Methods:

This prospective study included patients from July 2018 to March 2020 at the Ophthalmology department of Rangpur Medical College Hospital. 100 patients, 47 males, and 53 females were treated with transcanalicular laser-assisted DCR without intubation for NLDO. The patients were divided in four age groups <30 years (10%), 31-40 years (36%), 41-50 years (20%) and >50 years (34%). The inclusion criteria included primary NLDO and failed External DCR. The exclusion criteria included common canalicular obstruction, lacrimal pump failure, acute dacryocystitis, mucocele, nasal polyps, and gross nasal septal deviation. All patients had preoperative irrigation of the lacrimal pathways to evaluate the site of block and X-ray PNS to exclude gross DNS. Slit-lamp examination was done to rule out chronic conjunctivitis, ectropion, entropion, blepharitis, and lagophthalmos. Diode laser (980 nm infrared) using fiber-optic cable was used. The laser settings included optical power of a maximum of 5 watts with an aiming beam of 635 nm, pulse length 90 ms, and interpulse pause of 50 ms. The interior of the nasal cavity was visualized with the help of the nasal endoscope on a monitor. All patients were operated on under local of both puncta was done with a punctal dilator for facilitating the passage of the fiber-optic probe. The exact site of osteotomy was determined using an endoscope. The site just anterior and inferior to the attachment of the middle concha was selected for osteotomy. The laser probe was inserted horizontally into the sac through both puncta and then turned vertically downward, medially, and backward (same as in probing) till it was vertical. Then, the probe was pushed till a hard resistance was felt. A 0° rigid camera-mounted nasal endoscope was used to

visualize the laser beam. The laser beam was properly focused in the middle meatus. A contact continuous mode diode laser 980 nm was used to create osteotomy. Laser light was delivered through 0.5 mm optic fiber with 0.36 mm core. The osteotomy was enlarged to 5 mm by pulling up and then pushing down the laser probe in a circular pattern. No intubation with silicone stent was done. Syringing was carried out after creating an adequate opening. The success of the procedure was assessed by the patency of the lacrimal passage on irrigation with normal saline. The average size of osteotomy was 5 mm wide and procedure time was 15 min. A postoperative nasal pack was given. The patient was discharged the next day on combined steroid and antibiotic eye drops and xylometazoline hydrochloride 0.1% nasal drop. Follow-up examinations were at 1 week, 6 weeks, 3 months, and 6 months after surgery. Surgical success was defined as resolution of symptoms (epiphora or discharge) and unobstructed lacrimal irrigation.[13]

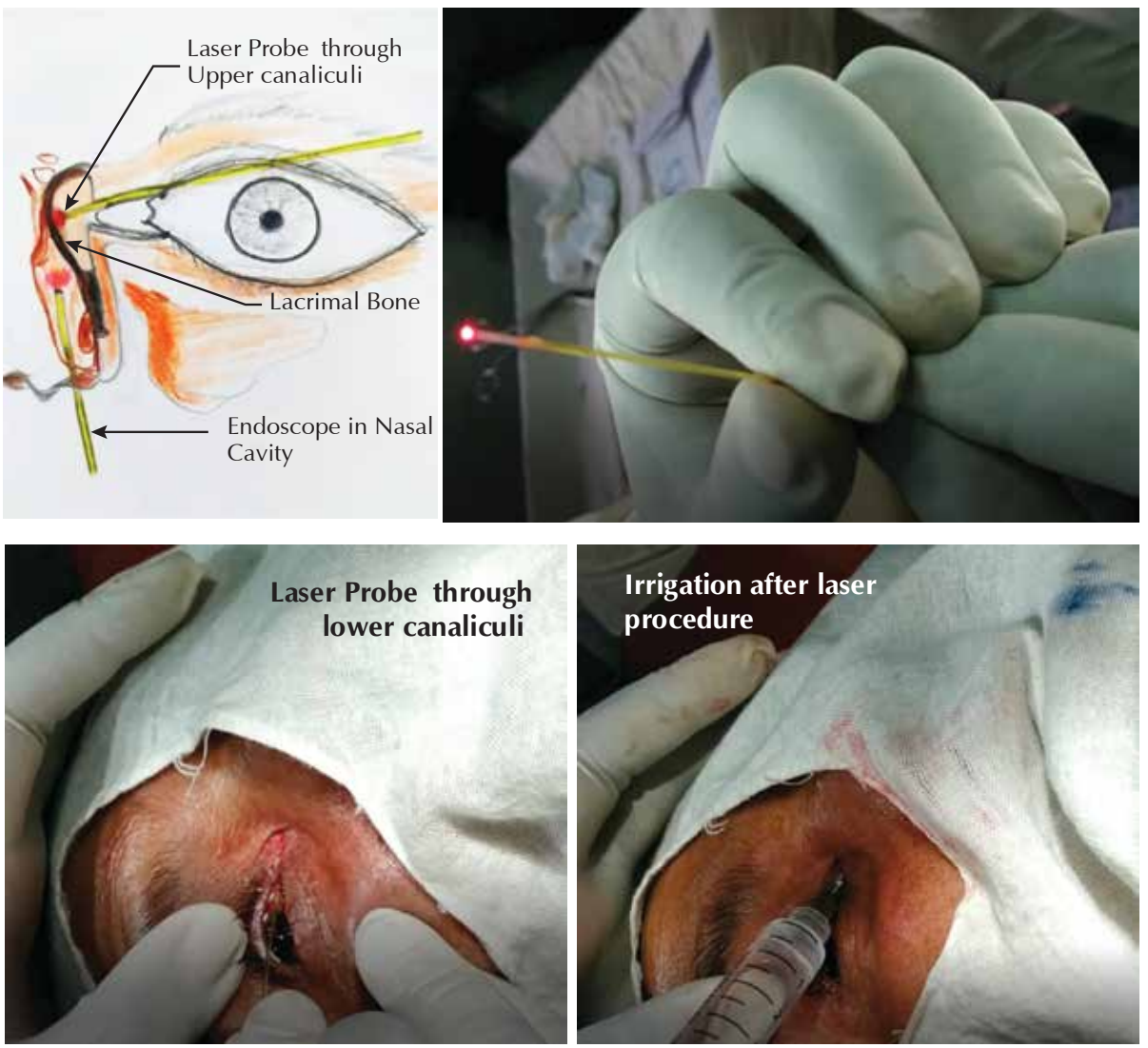


Figure-1: Transcanalicular laser-assisted DCR without intubation for NLDO

Results:

Our study initially included 130 patients among which up to last follow-up at 24 weeks (wk), 100 patients were available for study. The majority of the patients were female (Figure-2).

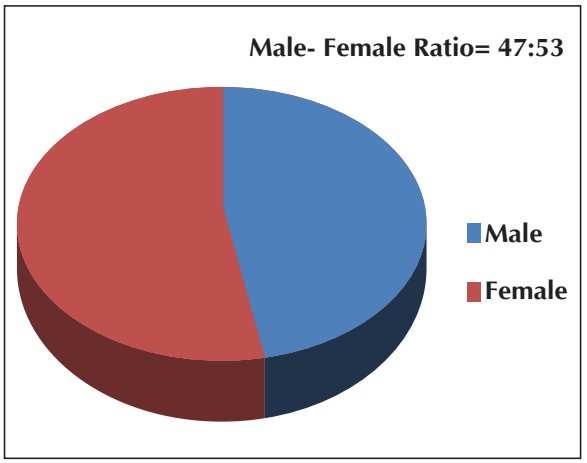


Figure-2: Male- Female Ratio= 47:53

Among the 100 patients, most the patients were between 31-40 years (36%) followed by patients above 50 years (34%) (Figure-3).

Patients were followed up after 1 wk, 6 wk, 12 wk, 24 wk. At first follow-up (1wk) patients of all age groups showed patient SPT (success rate 100%). At 2nd follow-up (after 6wks) age group <30 showed. 90% patent SPT , age group 31-40 yrs showed 83% patent SPT, age group 41-50 yrs showed 90% patent SPT and age group >50 yrs showed 100% patent SPT. At 3rd follow up (after 12 wks) sac patency was 60%, 69%, 80% and 97% respectively. At last follow up (after 24 wks) sac patency was 50%, 56%, 60% and 88% respectively. After 24 wks total success rate of transcaralicular diode laser DCR in all age group was 67%, where in age group >50 yrs success rate was high (88%) (Table-I).

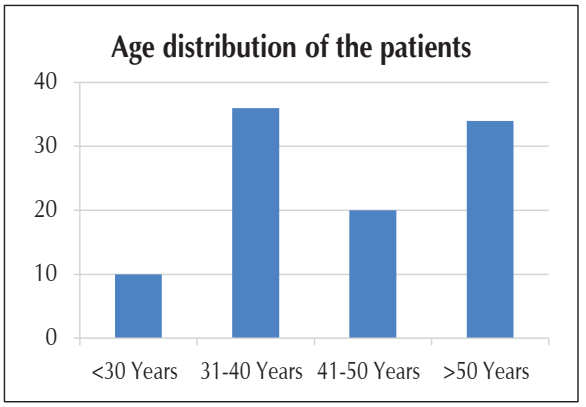


Figure-3: Age distribution of the patients

Table-I: Number of Patients of Patent and Blocked Irrigation in different follow up visit

Group (Years)	After 1 week		After 6 week		After 12 week		After 24 week	
	Patent (%)	Blocked (%)	Patent (%)	Blocked (%)	Patent (%)	Blocked (%)	Patent (%)	Blocked (%)
<30 (n=10)	10 (100)	0(0)	9(90)	1(10)	6(60)	4(40)	5(50)	5(50)
31-40 (n=36)	36(100)	0(0)	30(83)	6(17)	25(69)	11(31)	20(56)	16(44)
41-50 (n=20)	20(100)	0(0)	18(90)	2(10)	16(80)	4(20)	12(60)	8(40)
>50 (n=34)	34(100)	0(0)	34(100)	0(0)	33(97)	1(3)	30(88)	4(12)
Total	100(100)	0(0)	91(91)	9(9)	80(80)	20(20)	67(67)	33(33)

Discussion:

In recent years, diode laser has emerged as the preferred laser for performing transcanalicular laser DCR. A wide range of success rates with TCL-DCR has been reported in various age groups. Emre et al conducted a prospective study on 125 patients of different age groups and showed that patients below 30 yrs old, the success rate of TCL-DCR was 52% whereas in patients 51-60 yrs, it was 76% and patients >60 success rate was 88%.[13] Fahrettin akag et al conducted a study on 70 patients and showed that after 12 months young patients (>45 yrs) had a success rate of 46% whereas elderly patients (>45 yrs – 60 yrs) had a success rate of 76% after transcanalicular diode laser DCR.[14] In our study after 24 weeks (6 months) the success rate in the young age group(<30 yrs) was 50% whereas in the elderly age group(>50 yrs) success rate was 88% that closely resembles other studies[13-16], p<0.05 which is statistically significant.The main cause of failure with this technique is the obstruction of the bony window

due to fibrovascular proliferation. Other reasons for the failure of TCL-DCR are adhesions between the rhinostomy and the middle coacha.[17-20] Old patients mostly have involutional NLDO; however young patients tend to have local or systemic causes to precipitate NLDO. It has also been reported that strong expression of nasal mucosal heat shock protein 47 leads to the induction of fibrosis and scar tissue, thus decreasing. the effectiveness of transcanalicular laser DCR.[21-23] As age increases, the number of fibroblasts decreases due to the degeneration process. Decreased number and activity of fibroblasts produce fewer fibrous components. This explains the high success rate of transcanalicular laser DCR in elderly patients.

Conclusion:

This study clearly showed better transcalanicular diode laser DCR results in elderly patients (>50 yrs) than younger patients. So transcanalicular diode laser DCR can be a good surgical option for elderly patients suffering from chronic dacryocystitis.

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Original Article

Overview of Referred Obstetric Cases with Their Outcome in Rangpur Medical College and Hospital

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Abstract

Background:
Maternal morbidity and mortality remain a major challenge in the health sector worldwide, referral services for the management of high-risk obstetric cases are an integral part of maternal and perinatal health services. The maternal mortality rate in Bangladesh is high. An effective emergency obstetric strategy has been identified as a priority-based to reduce maternal and perinatal deaths. Since the capacity at different levels of public health facilities to provide EmOC (emergency obstetric care) is varied, an effective timely referral system is crucial. However, few studies have evaluated the functional status and quality of the referral system in Bangladesh.

Objectives:
To evaluate the primary causes, their referral pattern, clinical course and management strategy of referred patients, and the maternal and perinatal outcomes.

Methods:
The present study was a prospective observational study on referred obstetric cases conducted in the department of Obstetrics and Gynecology of Rangpur medical college & hospital during the period January 2021-June 2021.

Results:
Out of, 2842 admitted patients, referred cases were 1719(60.4%). The majority of cases were in the age group of 20-30 years (82%), multigravida (55.8%), and had no antenatal care (74.1%). History of previous Caesarion section (16.8%), postpartum (15.5%), antepartum (5.06%) hemorrhage, and eclampsia (12.1%) were the major cause of referral. Among the referred patients, vaginal delivery had 51.7%, caesarian section 37.9%, and 30.4% were conservatively managed. 26(1.5%) patients died mostly due to hypertensive (30.7%) and hemorrhagic disorders (46.1%). 440(26.39%) babies required NICU support, preterm, IUFD, and stillbirth were 14.1%, 5.05%, and 4.07% respectively.

Conclusion: The peripheral health care system needs to be strengthened and the practice of early referral to high-risk cases needs to be implemented for a better outcomes.

Keywords: Referral obstetric case, Maternal outcome, Perinatal outcome

Introduction:

A referred system offers women some degree of Health Care at every level of the healthcare system, while linking the different levels through an established communication transport system.[1] For providing access to essential obstetric care, the referral system, is an essential component of any health system which is important in pregnancy and childbirth.[2] Prevention of maternal mortality network study has proposed a three delays model

for referrals in obstetric and gynecological emergencies.[3] Although most obstetric complications (defined as acute conditions such as postpartum hemorrhage, sepsis, eclampsia, and obstructed labour) that can cause maternal death cannot be predicted, the majority can be treated with timely provision of a package of evidence-based interventions known as emergency obstetric care (EmOC).[4-6] The availability of EmOC is considered to be an indicator of how well a health system is prepared to manage conditions leading to acute maternal morbidity and mortality.[7,8] It is still recommended to electively refer the pregnant women with previous caesarean section, breech presentation, transverse lie, multiple gestations, hypertension, and severe anaemia for delivery before any complication arises to a health care center where all facilities to deal with the complications are available.[9]

In Bangladesh, health care facility is provided at six levels with the ward level at the bottom and the national level at the apex.[10]

Rangpur medical college hospital is a teaching hospital and national tertiary referral institution located in the Centre of the Rangpur division. The main responsibility of this hospital is to provide tertiary medical services for the whole country. Local care includes secondary care for patients referred from any public or private health unit. According to the WHO maternal health and safe motherhood program, estimated obstetric references account for more than 20% of pregnancy-related morbidity.[11] One estimate shows that with one maternal death, 15% of pregnancies develop complications which necessities tertiary obstetric care.[12] With this background, present study was undertaken to examine the current nature of referrals, to evaluate the major cause of referral, incidence of obstetric referrals in Rangpur medical college and hospital, and maternal and fetal outcomes among the referred patient.

Methods:

The present study was a prospective study. We reviewed those obstetric cases who were referred from various centers during the covid-19 situation from January 2021 to June 2021 at Rangpur medical college hospital with prior consent from the Director, of Rangpur medical hospital & clearance from the ethical committee of Rangpur medical college. Proper counseling & consent of patients or their legal guardian was done during the study period. Through history, complete physical and obstetrical examination and relevant investigation were done. Patients' management, clinical course, mode of delivery, both maternal and perinatal outcomes were documented. All referred antenatal case > 20 weeks of pregnancy with intrapartum and postpartum complications were included. All the relevant papers of the patients were documented in a pre-designated data collection sheet and analyzed with the help of SSPS 23 version.

Results:

Total admissions were 4277 patients in the department of Obstetrics and Gynecology (Rangpur medical college & hospital). Among them, Gynecological cases were 1435(35%) and Obstetric cases were 2842(65%). Out of 2842 patient Obstetrics cases, 1719 were referred from outside hospitals, private clinics, and health complexes to this hospital. The referred case was 60.4%. A majority number of cases were in the age group of 20-30 years (82%). According to gravidity and parity; multigravida patients were maximum (55.8%). In the present study, a maximum number of patients (74.1%) had no antenatal care. 51% of cases were referred during intrapartum period followed by antepartum (35%) and postpartum (14%) (Table-I).

Table-I: Age, parity, status of antenatal care and gestational period at admission among the study patients (n =1719)

Variable	Number	Percentage
Age (Years)		
<20	35	2.0
21-30	1410	82
31- 40	274	15.9
Parity		
Primigravida	647	37.6
Multigravida	960	55.8
Grand multigravida	112	6.5
Status of antenatal care		
Booked	445	25.8
Unbooked	1274	74.2
Period of gestation		
Antepartum	599	35
Intrapartum	876	51
Postpartum	240	14

Table-II showed the majority of patients were referred for the history of previous caesarian section (16.8%) postpartum (15.5%), antepartum (5.06%) hemorrhage, eclampsia (12.1%) and severe PE (10.6%).

Table-II: Pattern of different presentation among referred patients

Patients with complicating pregnancy	Number	Percentage
Previous C/S	290	16.8
PPH	268	15.5
Eclampsia	221	12.1
Severe PE	183	10.6
Medical disorder complicating pregnancy	178	10.3
APH	87	5.06
PROM	54	3.1
PTL	36	2.09
Prolonged labour	29	1.69
Malpresentation	22	1.2

Among the referred case, 1542 (89.7%) patients need delivery either normal vaginal delivery (52%) or cesarean section (38%). And rest of 177 (10.3%) patients were managed conservatively (n=120) followed by laparotomy (n=38) and peripartum hysterectomy (n=19) (Figure-1).

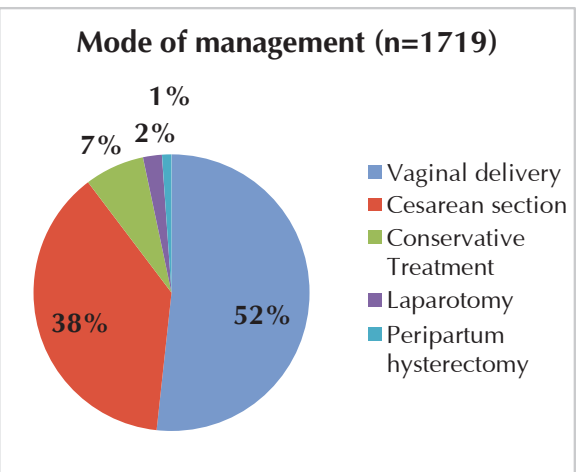


Figure-1: Distribution of patients according to mode of management (n=1719)

During the study period maternal mortality was 1.5%(26), among them hypertensive (30.7%) and hemorrhagic disorders (46.1%) are the major cause of maternal death (Table-III).

Table-III: Causes of maternal death (n=26)

Causes of death	Number	Percentage
Direct cause (n=23)		
Hypertensive disorder	08	30.7
Hemorrhagic cause (APH, PPH)	12	46.1
Pulmonary embolism	02	7.6
Sepsis	01	3.8
Indirect cause (n=03)		
Jaundice	01	3.8
Heart disease	01	3.8
Burn	01	3.8

A total of 1667 babies were delivered within six months. Among them 1248(74.26%) were live term births, preterm 14.1%, IUFD was 5.05% stillbirth 4.07%. Congenital anomalies were found in 23(1.07%) cases (Table-IV).

Table IV: Neonatal outcome (n=1667)

Neonatal outcome	Number	Percentage
live birth	1248	74.26
Preterm	208	14.1
IUFD	95	5.05
Still birth	68	4.07
Neonatal death within 1st 7 days	25	1.9
Congenital anomaly	23	1.07

Figure-2 showed that out of 1667 delivered babies 440 cases (26.39%) were admitted to NICU, the majority due to preterm birth (54.3%) and birth asphyxia (21.1%).

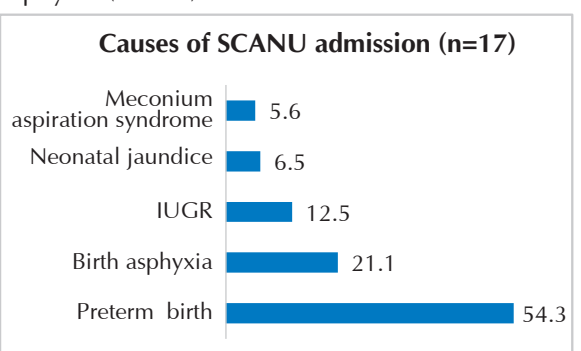


Figure-2: Cause of SCANU (special care unit of newborn) admission (n=17)

Out of 1719 cases, 17 (0.98%) patients were admitted to ICU mostly due to irreversible hemorrhagic shock (29%) & exploratory laparotomy (29%) (Figure-3).

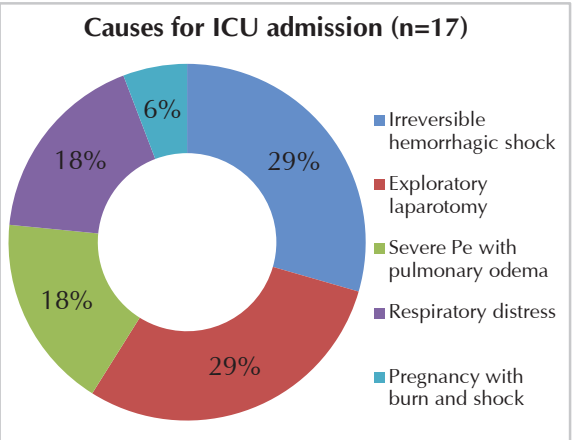


Figure-3: Distribution of causes for ICU admission (n=17)

In this study 86.2% were discharged,3.8% shifted to other departments including ICU, 1.5% expired, absconded & DORB was 5.4%, 2.9% respectively (Table-V).

Table V: Distribution of maternal outcome (n=1719)

Maternal Outcome	Number	Percentage
Discharge	1483	86.2
Shift to other specialty (including ICU)	67	3.8
Expired	26	1.5
Absconded	93	5.4
DORB	50	2.9

Discussion:

Rangpur medical college hospital is a tertiary care hospital situated in the northern part of Bangladesh where complicated obstetric and gynecological cases are referred from various peripheral primary health centers, Upazila health complex, district hospitals, and private hospitals in surrounding districts. The WHO estimates that at least 88-98% of maternal deaths can be averted with timely access to existing, emergency obstetric care using effective efficient referral systems.[13] In early and appropriate time are a challenge to obstetricians since the delay in referral affects the maternal perinatal outcome adversely, hence identification of at-risk patients and obstetric emergencies and timely referral is of immense importance. This study includes 1719 referral obstetric cases during the period of six months, with total obstetric admissions being 2842 during this period. Hence, referredd cases account for 60.4% of total admission in our tertiary care hospital, this is so much higher than in another study like Puri A et al in which the study noted 24.16% of cases were referred.[14] This is high but this can be prevented by adequate facilities for ANC (Antenatal Care), early detection of high-risk pregnancy, facility improvement by trained manpower, logistic support, safe blood transfusion, Improving neonatal facilities, increase awareness trained of physicians & nurses regarding the emergency obstetric cases. In our study, the maximum number was between 21-30 years of age (82%) which was correlated with a study conducted by Morsheda B et al on assessing the overall age distribution found that the majority (74%) cases were between 20- 35 years.[15] Morsheda B et al found 50% of patients were primigravida,[15] Goswami P et al found 47% women were primigravida[16] which was not comparable with our study, we found 37.6% primigravida cases. In our study, the majority of cases were multigravida 55.8%, which was comparable with Jyoti B et al[17] found that multigravida were 50% . This may be due to privilege being given in primigravida mother is a social norm. In this present study, 25.8% were booked patients whereas 74.2% were unbooked cases. This may be due to the covid-19 pandemic condition when the patients were unable to go to ANC visits. Due to lacking of proper ANC and lack of education regarding signs of pregnancy and birth plans, they were reluctant to appropriate time for taking early management. In our study majority of the referral was due to postpartum hemorrhage 268(15.5%) followed by eclampsia 221(12.8%), severe preeclampsia 183(10.6%) , medical disorder complicating pregnancy 178(10.3%), premature rupture of membrane 87(5.06%). In a study done by Patel HC et al[18] causes of referral were preeclampsia (16%) and MSL (5%). Rahi et al[19] noted that the majority of cases were referred for the hypertensive disorder of pregnancy (26%), preterm labour (26%), and medical disorder of pregnancy (21%). Maskey S et al[20] showed in a study that the most common diagnosis at referral was medical disorder complicating pregnancy (38%) among which cardiac disease accounted for 20% followed by hypertensive disorder (17%). Previous cesarean

section was the cause of referral in 16.8% cases in our study, which was comparable to a study conducted by Khatun A et al. The previous cesarean section was the cause of referral in 15% of cases.[21] But a study by Goswami P et al[16] found that previous cesarean section was the cause of reference in 6% was not correlate with our study. It was due to the lack of a Caesarion section and blood transfusion facility in many centers. In the present study, out of total referred cases, 38% underwent cesarean section, and 52% were delivered vaginally. Sorebye KI et al[22] found that referral status contributed substantially to the increased cesarean section rate, which was 55%, which is not correlated with our study 37%. In a study, Goswami P et al[16] found 48% of referred cases had vaginal delivery which was correlated to our study 52% had a vaginal delivery. In our study 17 cases(.98%) were admitted to ICU. Goswami D et al[23] studied 154 cases referred to tertiary health centers in 2014.They found that 19 patients (8.02%) needed ICU admission. In our study, the majority of cases for ICU admission were irreversible hemorrhagic shock & exploratory laparotomy, followed by pulmonary oedema and respiratory distress. In the present study total maternal death was 26 (1.5%) which correlates with the study conducted by Maskey et al[22] (1.8% death). In the presents study the majority cause of maternal death was hemorrhagic disorder (46.1%) and hypertensive disorder (30.7%). Begum et al[24] found the leading cause of death were hypertensive disorder 35% which was correlate our study and obstetric hemorrhagic 20% was not comparable our present study. Obstetric hemorrhage may be preventable. So that TBA (trained birth attendant) & volunteer health workers should be aware of the importance of the hemoglobin status of a woman during pregnancy. The iron tablet must be given to all women during pregnancy and even after delivery in the lactating period, to make their sufficient hemoglobin status that can cope with the situation for herself so that they could bear the blood loss of delivery, and we could reduce the maternal mortality due to haemorrhage. With the period of six months total baby was delivered in 1667 out of 1719 referred cases, among them live birth 76.26%, preterm birth 14.1%, stillbirth 4.05%, and neonatal death within 1st 7 days 1.48% during the hospital stay. In the present study, NICU admission was 440 cases out of 1679 delivered cases that were 26.39%. Bharati et al[25] showed that 23.40% had NICU admission which correlated with our study. For preterm care, 36.3% was not correlated with the present study which was 54.3%.[25] Birth asphyxia was high at 21.1% in our study.[25] This may be due to untrained birth attendants during delivery at home and lack of knowledge about neonatal referral signs and early referral. In this study, 86.2% of patients were discharged which was correlated to a study Jakhar K et al[26] showed that 98.3% . Shift to other specialty departments was 78%, but in our study it was 3.8%. It is due to all critically ill Obstetric patients which require a multidisciplinary team approach to get treatment on time, with good intensive care monitoring and got facilities for further interventions if required.

Conclusion:

Overall referral rate was high in our study, which was worse in pandemic situations. In order to decrease the number of unnecessary referrals and to reduce the burden on tertiary care hospitals, healthcare workers should be trained in essential and emergency obstetric care, which will help in reducing morbidity and mortality. The causes of referral were high due to hemorrhagic disorder. Treatment of anemia in the antenatal period and primary treatment of hemorrhage including administration of fluids, uterotonic drugs, and suturing of tears at primary and secondary centers help in reducing mortality due to hemorrhage. The hypertensive disorder was another cause of referral. Cheek lists should be available in all Obstetric emergency centers and should be provided as per our national guidelines as a prescribed protocol. It is evident that most of the cause of mortality was preventable. This is our recommendation to reduce maternal & perinatal mortality & morbidity, also the first dose of MgSo4 should be given in case of eclampsia and preeclampsia. The health care worker of the primary care center should be trained properly, update their knowledge from time to time, early detection, identification of risk obstetric patients, blood transfusion facility at all secondary health centers for 24 hours, and trained midwives available 24/7 hours. Health education

and awareness by mass media and non-government organizations can improve the health and social status of women in our country.

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Clinicopathological Study of Oral Carcinoma

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Abstract

Background:
Oral carcinoma is thought to be the sixth most common form of cancer-causing up to 50% of all malignancies in parts of India and South-East Asia. It is the second killer in both developed and developing countries. The 5-year survival rate for oral carcinoma is only 50%. Over 90% of all primary malignant tumors of the oral cavity are squamous cell carcinoma.

Objective:
The study was aimed to see the clinical and histopathological pattern of oral cancer

Methods:
In this cross-sectional study 30 patients with carcinoma of oral cavity from the Department of Oral and Maxillofacial Surgery, Dental Unit, Rangpur Medical College and Hospital, Rangpur were included, the period from October 2018 to September 2019. The patients were examined pre-operatively and in the post-operative period. The surgical specimen was sent for Histo-pathology.

Results:
The majority of the patients were in the age group of 61-70 years where the male-female ratio was 1:1.4. The majority of the patients complained of soreness/ irritation and ulceration in the oral cavity followed by pain, difficulty in mastication, odynophagia, dysphagia, spitting of blood. About the site of the lesion overall involvement of buccal mucosa (53.3%) was the most affected part. The majority of the patients came in their late-stage (96.67%) and histopathologically all were of squamous cell cercinoma.

Conclusion:
Squamous cell carcinoma was the predominant type of oral cancer and buccal mucosa was the commonest site of origin for these cancers. It was usually a disease of elderly people. And the commonest symptom was irritation or soreness.

Keywords: Oral Carcinoma, Biopsy

Introduction:

Oral cancer is the sixth most common cancer and a frequently occurring cancer worldwide.[1] It is one of the most challenging malignancies of the head and neck regions that reportedly affect more than half million people every year worldwide.[1] Especially oral squamous cell carcinoma (OSCC) is responsible for 85% of all oral cancer which affects its site or origin and can spread to cervical node, lungs, liver, and bones.[2] During the year 2012, three million oral cancer patients (both sexes) have been identified, of which 145,000 cases were fatal.[2] The incident rates of oral cancer are lower in the developing countries than in the developed countries.[1] In India, the incident rate of oral cancer is 12.6% per one million populations and remains the most common cancer in other Asian countries. The 5-year survival rate of early stage oral cancer patients is approximately 82%, and the advanced stage is about 20%. From 1983

to 2006, the 5-year survival rate increased in developed countries such as the USA although the same time, a negative trend is noticed in some countries such as Brazil, Egypt, Japan, UK, and the Netherlands where the number of causality has increased due to oral cancer.[1] In the developing world after stomach and cervical cancer, oral cancer is the third most common cancer.[3] Annually 378,500 new cases of intra-oral cancer are diagnosed worldwide.[3] Chewing betel, paan and areca is known to be a strong risk factor for developing oral cancer in many Asian countries.[4,5] In India where such practices are common, oral cancer represents up to 40% of all cancers, compared to just 4% in UK.[6] As per international classification of diseases oral cancers include cancers of lips, tongue, gums, floor of mouth, cheek mucosa, palate and other parts of mouth.[7] The prevalence of intra-oral cancer appears to be rising in many countries but the prevalence of lip cancer appears to be decreasing, especially in younger people.[8] During its earliest stage, oral cancer may be totally asymptomatic or it may present with mild irritation. When the lesion becomes more advanced and ulcerated pain usually occurs. So oral cancers are notorious for their late presentations. Associated symptoms include bleeding, poor dental fit, Dysphagia, odynophagia and trismus.[9] Incisional biopsy is essential to confirm the diagnosis. A biopsy must be performed on any oral mucosal lesion suggestive of carcinoma and those ulcer that does not heal within 2–3 weeks.[10] Early detection of neoplasms is necessary to reduce morbidity and mortality associated with oral cancers. Dentists play a major role in the early detection of oral cancers, thus increasing the survival rates of patients.

Methods:

In this cross sectional study, thirty cases of oral carcinoma were included from the Department of Oral and Maxillofacial Surgery at the Dental Unit of Rangpur Medical College and Hospital, Rangpur within the period of October 2018 to September 2019.Histopathologically confirmed cases of oral cancer were included in this study in different age and sex groups belonging to different socio-economic conditions. The aim of the current study were to see the age wise prevalence and to assess the clinical and histopathological patterns of oral cancers.

Results:

Table-I showed the majority cases (30%) were in the 60-70 years of age and female (53.3%) are more affected than male (46.7%)

Table-I: Socio-demographic characteristics of study subjects (n=30)

Socio-demographic character	Number	Percentage
Age (Years)		
21-30	1	3.3
31-40	6	20
41-50	6	20
51-60	6	20
61-70	9	30
70+	2	6.7
Total	30	100
Sex		
Male	14	46.7
Female	16	53.3
Total	30	100

Table-II showed the clinical presentation of oral squamous cell carcinoma where ulceration and irritation (82.7%) of oral cavity is the chief complain followed by 55.1% complain of difficulty in mastication, 24.1% odynophagia, 20.6% dysphagia and spitting of blood 13.7%.

Table-II: Distribution of study subjects according to Clinical features (n=30)

Clinical features	Number	Percentage
Irritation	24	82.7
Ulceration	24	82.7
Pain	22	75.8
Burning sensation	8	27.5
Trismus	16	55.1
Bleeding	4	13.7
Normal health	9	31.0
Emaciated	14	48.2
Debilitated	5	17.2
Referred pain	10	34.4
Pain on swallowing	7	24.1
Difficulty in swallowing	6	20.6

Table-III showed different site of oral cavity affected by squamous cell carcinoma where buccal mucosa with involving retromolar trigone is the predominant site (23.3%) of involvement followed buccal mucosa (16.7%), alveolar mucosa (13.4%), Tongue (13.4%), retromolar trigone (10%), buccal mucosa with involving mandibular alveolar mucosa (6.7%), buccal mucosa with involving lip (3.3%), buccal mucosa with involving retromolar trigone and maxillary alveolar mucosa (3.3,%), floor of mouth (3.3%), palate (3.3%) and lip (3.3%).

Table-III: Distribution of study subjects according to site of primary tumour (n=30)

Site	Number	Percentage
Buccal mucosa	5	16.7
Buccal mucosa with involving mandibular alveolar mucosa	2	6.7
Buccal mucosa with involving Retromolar trigone	7	23.3
Palate	1	3.3
Tongue	4	13.4
Floor of the mouth	1	3.3
Lip	1	3.3
Retromolar trigone	3	10.0
Alveolar mucosa	4	13.4
Buccal mucosa with involving lip	1	3.3
Buccal mucosa with involving with retromolar trigone and maxillary Alveolar mucosa	1	3.3
Total	30	100

In this study, histopathologically all the oral cancer was squamous cell carcinoma (SCC). Table-IV showed the staging of carcinoma where majority of the cases were diagnosed at late stage, stage IV (56.7%).

Table-IV: Distribution of study subjects according to Stage at first diagnosis (n=30)

Stage	Number	Percentage
Stage II	1	3.3
Stage III	12	40
Stage IV	17	56.7
Total	30	100

Discussion:

Oral cancer (OC) is responsible for highest incidence among Asian countries and it is the commonest cancer in India which accounts for 50–70% of total cancer mortality.[11] It is the sixth most common cancer worldwide.[1,2,12] A total of 30 purposively selected patients of oral cancer were included in the present study. Among them, highest (30%) were found in the 61-70 years age group which is in accordance with a study[13] in Islamabad. The risk of developing oral cancer increases with age.[14] In this study 56.7% cases were above 50 years of age where as in UK the majority of cases (86%) occur in people aged 50 or above.[15] In previous studies[16] maximum occurrence of oral squamous cell carcinoma reported in 41-50 years age group. Another study at Netherland reveals less than 4% incidence in the age group below 40 years[17] where in our study 23.3% incidence in this age group. This indicates presentation of oral cancer in our country at a relatively earlier age which may be due to frequent use of betel leaf and areca nut in younger people. In our study 46.7% were male and fifty three 53.3% were female which is in accordance with some studies[18] where female patients are more affected than male patients. Gender ratio is observed in India and Thailand where male to female ratio is 1:2.0 and 1:1.56 respectively[19] which is also in accordance with our study. This might be due to the habit of chewing betel quid with tobacco in these females. Due to betel quid and tobacco chewing habits south Asian countries such as India, Sri Lanka, Pakistan, Bangladesh, and Taiwan report the highest incidence rates of oral cancer in the World.[20] In contrast to the present finding, there are some western studies[21] in which oral cancer is more frequent in males than females. It might be due to in western countries high consumption of smoked tobacco and alcohol are very popular and these habits are more common in males than females. Tobacco and alcohol consumption are the most

determinant etiological factors.[22] But there are some studies in France and Slovakia which show incidence of oral cancer is decreasing among men and increasing among women.[23] Almost all the patients presented with multiple symptoms & 82.7% of the patients complain of soreness or irritation in the oral cavity, 82.7% complain of ulceration in the oral cavity, 55.1% complain of difficulty in mastication, 24.1% odynophagia, 20.6% dysphagia and spitting of blood 13.7% which is almost equal with other studies.[9,24] When compared the involvement of different sites in the current study, buccal mucosa with involving retromolar trigone was found to be the predominant site with 23.3% involvement, followed buccal mucosa (16.7%), alveolar mucosa (13.4%), tongue (13.4%), retromolar trigone(10%), buccal mucosa with involving mandibular alveolar mucosa (6.7%), buccal mucosa with involving lip(3.3%),-buccal mucosa with involving retromolar trigone and maxillary alveolar mucosa (3.3,%), floor of mouth (3.3%), palate (3.3%) and lip (3.3%). In our study lesions involving another regions total 40% of the malignancies, what indicates that sometimes due to a late diagnosis. In many Asian countries for developing oral cancer chewing betel leaf and areca nut is known to be a strong risk factor.[25] A study found buccal mucosa to be the site at greater risk of malignancy in pan-tobacco chewers as compared to other intraoral sites.[26] The main reason is there has relationship between smokeless tobacco use and risk of buccal cancer.[27] In our study overall involvement of buccal mucosa (53.3%)which was the most affected site. This might be due to all of the patients of our study have pan-tobacco chewing habit. There are some Asian studies[9,28] which also reported that buccal mucosa as the predominant site of involvement. In contrast of the present finding, there are some western studies[21,29] found tongue as the most affected site of oral carcinoma. The main reason might be due to in the west high consumption of smoked tobacco and alcohol, tongue and floor of the mouth are the predominant oral cancers.[30] And Smoking tobacco and alcohol drinking habits are very popular in western countries.In the present study, 100% of the lesions were squamous cell carcinoma. Study at Ayub medical college, Abottabad showed that 94% of the all oral malignancies were squamous cell carcinoma[31] which is consistent with our finding. There are also some studies[9,21,32] where SCC is predominant of all oral cancers. The majority of OSCC were diagnosed at a late phase[33], in stages III or IV[34], which markedly decreases the chances of survival and hampers significantly patient's normal life. In our study, analysis of the staging of the patients revealed that 3.3% of the lesions were in early stage and 96.7% were late stage which is almost in similar with some studies in elsewhere of the world.[35,36] This is also in accordance with the results from other studies[21,29] but contrast with some recent studies[37] regarding oral cancer in Spain where most of patients had stage I or II tumors. One of the reasons for this was related with the possible low awareness for oral cancer.[38]

Conclusion:

Squamous cell carcinoma was the predominant type of oral cancer. Elderly people and female were mostly affected. Irritation or soreness was the commonest symptom. Buccal mucosa was the commonest site of lesion. Majority of the patients had late stage cancer.

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Original Article

Clinicopathological Study of Surgically Important Parasitic Diseases in Rangpur Medical College Hospital

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Abstract

Background:
Parasites are of worldwide distribution, but environmental factors, social customs, and habits of persons greatly influence the distribution of parasites. It is very important to find out the incidence and clinico-pathological presentation of surgically important parasitic disease. This study is intended to describe the occurrence and management of surgically important parasitic diseases and their outcome in our country in the setting of Rangpur Medical College Hospital.

Methods:
This observation type of cross-sectional study was carried out at the Department of Surgery and Department of pediatrics surgery of Rangpur Medical College Hospital, Rangpur from July 2012 to December 2012 over a period of six months. Total 75 patients having different parasitic diseases admitted into the assigned department of Rangpur medical college hospital during the study period were evaluated on the basis of comprehensive history, clinical examinations, and relevant investigations.

Results:
Among the parasites concerned in this study top of the list was occupied by Ascaris lumbricoides, which was responsible for 29 (38.67%)of cases. The second common organism was Entamoeba histolytica, which was responsible for 26 (34.67%) cases. Out of 75 cases, the amoebic liver abscess was found most common disease in 26 (34.67%) cases followed by intestinal obstruction due to Ascaris bolus in 17 (22.67%) cases. The liver was found most common organ affected in 31(41.33%) cases followed by small gut in 17 (22.67%) cases and lymphatic system in 14(18.67%) cases. Overall 53(71%) cases were presented acutely. Out of 75 cases, 28 (37.33%) cases required operative treatment and the rest 47(62.67%) cases were treated conservatively. 71 (94.67%) patients were recovered completely without any complication and 4 (5.33%) patients were recovered with complication. There was no mortality in this study.

Conclusion:
Surgical complications of ascariasis appeared as a commonest parasitic disease of surgical practice in our country followed by amoebic liver abscess, a surgical manifestation of filariasis, and hydatid cyst of the liver.

Keywords: Parasitic disease, Surgically important, Ascariasis, Amoebic liver abscess

Introduction:

Parasites are of worldwide distribution, but environmental factors, social customs, and habits of persons greatly influence the distribution of parasites. In Bangladesh, parasitic infestations are endemic due to environmental conditions like plenty of rainfall, presence, and habit of a suitable host, easy escape from the host, and environmental conditions favoring the survival of the parasites outside of the host. The various diseases caused by parasites can be managed abscess, hydatid cyst of the liver, biliary ascariasis, and surgical complication of filariasis. Out of all parasitic diseases, Ascaris lumbricoides infestation occupies the top of the list in Bangladesh.[1] It is estimated that 10% of the world's population is infested with *Entamoeba histolytica*.[2] A common surgical complication of E. histolytica infestation is an amoebic liver abscess.

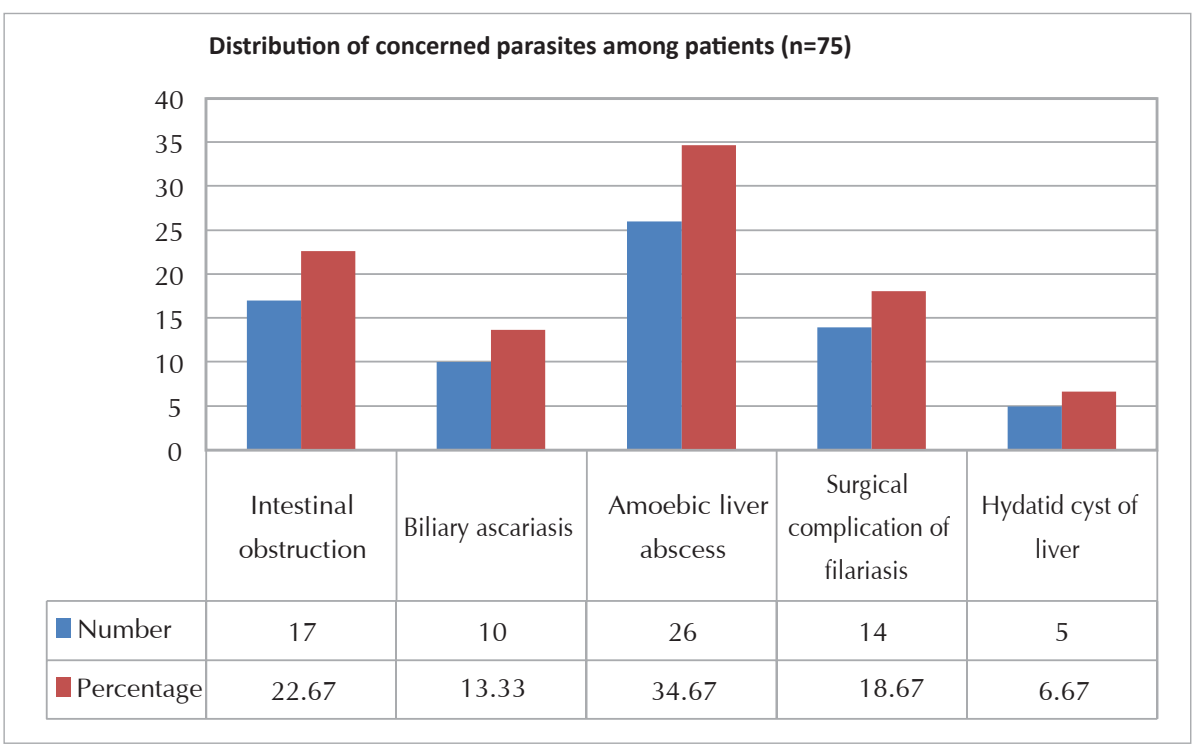
In the tropics, about 2 to 10% (average 5%) of individuals infested with E. histolytica suffers from hepatic complication.[3] Hydatid cyst of the liver and other organs caused by E. granulosus also occurs in Bangladesh. Among complications, secondary infection and ruptures are the most common. Lymphatic filariasis (LF) or elephantiasis is the most debilitating and disfiguring scourge among all diseases.[4] It is one of the most major public health problems in many South-Asian countries. Very few studies have so far been carried out on this aspect to address surgical complications of parasitic diseases. Also, the scenario is not clear from our perspective. So it is very important to find out the scenario in surgically important common parasitic disease. This study was intended to find out the incidence of parasitic diseases in surgical practice in Rangpur Medical College Hospital.

Methods:

This observation type of cross-sectional study was carried out at the Department of Surgery and Department of pediatric surgery of Rangpur Medical College Hospital, Rangpur from July 2012 to December 2012 over a period of six months. Total 75 patients having different parasitic diseases admitted into the assigned department of rangpur medical college hospital during the study period were evaluated on the basis of comprehensive history, clinical examinations, and relevant investigations. Some cases were also diagnosed as parasitic origin per-operatively. All the information was recorded in the fixed protocol. Collected data was classified, edited, coded, and entered into the computer for statistical analysis by using MS EXCEL. The study and procedure were explained to the patients and written consent was obtained from the patients. Hospital authorities were informed about the study and permission was obtained.

Results:

Among the common parasites concerned with surgical diseases in this study top of the list was occupied by Ascaris lumbricoides, which was responsible for 29 (38.67%)of cases. The second common organism in this study group was *Entamoeba histolytica*, which was responsible for 26 (34.67%) cases (Figure-1). Out of 75 cases, the amoebic liver abscess was found most common parasitic disease of surgical importance followed by intestinal obstruction due to Ascaris bolus (Figure-2).



	Intestinal obstruction	Biliary ascariasis	Amoebic liver abscess	Surgical complication of filariasis	Hydatid cyst of liver
Number	17	10	26	14	5
Percentage	22.67	13.33	34.67	18.67	6.67

Figure-1: Distribution of concerned parasites among patients (n=75)

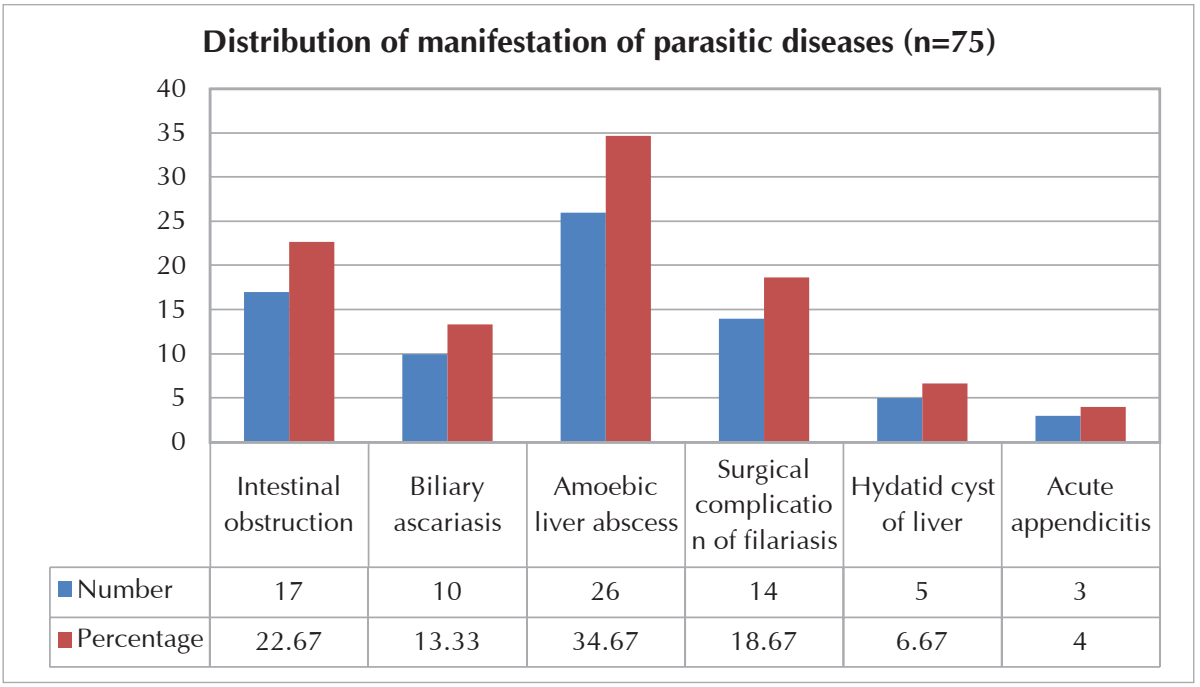


Figure-2: Distribution of manifestation of parasitic diseases (n=75)

The liver was found most common organ affected by parasites. Out of 75 studied cases, the liver was the target organ in 31 (41.33%) cases followed by small gut in 17 (22.67%) cases and the lymphatic system in 14 (18.67%) cases (Figure-3).

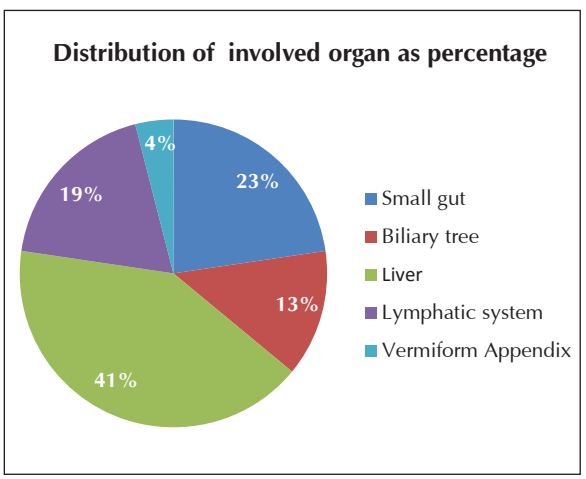


Figure-3: Distribution of involved organ as percentage

All cases of intestinal obstruction and acute appendicitis presented with acute abdomen. Most cases of biliary ascariasis and amoebic liver abscess were also admitted with the acute presentation. All cases of hydatid cyst and the majority of cases of filariasis had a chronic presentation (Table-I).

Table-I: Clinical presentation of diseases during admission

Name of disease	Acute presentation		Chronic presentation	
	Number	Percentage	Number	Percentage
Intestinal obstruction (n=17)	17	100%	0	0%
Amoebic liver abscess (n=26)	22	85%	4	15%
Biliary ascariasis (n=10)	8	80%	2	20%
Hydatid cyst (n=5)	0	0%	5	100%
Filariasis (n=14)	3	21%	11	79%
Acute Appendicitis (n=3)	3	100%	0	0%
Total	53	71%	22	29%

Discussion:

The various disorders caused by parasites are managed medically, but some of them are directly related to surgical management. The study of parasitic diseases of surgical importance is a mere attempt to find out the frequency of parasitic diseases in our surgical practice, common parasitic diseases, common target organs involved by these diseases, and to evaluate the clinical presentation of these diseases, their management, and

outcome. The present study may not be the representation of the overall picture in the general population. Ascaris lumbricoides may give rise to a variety of surgical complications. Intestinal obstruction is the most common; extra-intestinal migration to the biliary tree and vermiform appendix also gives rise to biliary ascariasis and acute appendicitis respectively.[5] In this study, 29(38.67%) cases were found infested with Ascaris lumbricoides. 17(22.67%) cases of intestinal obstruction due to Ascaris bolus, 10(13.33%) cases of biliary ascariasis, and 2(2.26%) cases of acute appendicitis were found. Kuntz found 83% of rural children are affected with roundworm.[6] Whereas Muttalib MA reported Ascaris infestation in 92% of children under 14 years in rural areas and 27.6% children in urban areas and among Dhaka university students it was 40.6%.[7] In the present study, intestinal obstruction was found most commonly among the children of 5-9 year age group; 12(70.58%) cases out of 17, whereas Upadhyaya et al found that 2-6 year age group were most affected (61.9%).[8] This difference may be due to deworming program conducted by Govt. of Bangladesh for children of 2-5 years of age.In the present study, among 10 patients of biliary ascariasis 6(60%) patients were treated conservatively and 04(40%) patients by operative treatment. Khurooin a series of 21 patients with biliary ascariasis has made a similar observation,14(67%)patients improved with conservative treatment and 07(33%) patients needed operative intervention.[9] Biswas also described a similar result in his study of 18 patients; 12(66.67%) were treated conservatively and 06(33.33%) by surgical intervention.[10] In this study out of 29 cases of surgical complications of ascariasis 02 cases were diagnosed as acute appendicitis. 01 case of acute appendicitis was also found due to pinworm infestation of the appendix. In another study of 145 cases of surgical complications of ascariasis, reported 10 cases were due to acute appendicitis caused by Ascaris in appendix.[11] Louwin a study of 100 cases of surgical complications of Ascaris lumbricoides, reported 02 cases was due to acute appendicitis caused by Ascaris in appendix.[12] In this study, 26 cases were diagnosed as amoebic liver abscess. Among them, 17(65.38%) cases were treated conservatively by amoebicidal drug and needle aspiration under ultrasonic guidance, and the rest 9(34.42%) cases needed operative procedure. Whereas in a study of 51 cases of amoebic liver abscess Shabbir et al treated 45(88.25%) cases conservatively and 6(11.75%) cases surgically.[13] The current study shows a higher rate of the operative procedure. This may be due to the failure of the aspiration under ultrasonic guidance. During the present study period, 5 patients were diagnosed as hydatid cyst of liver, while Karim SS et al described 23 cases of hydatid disease during the period of January 1989 to June 1991.[14] All 05(100%) patients of hydatid cyst of the present study needed surgical intervention although the study of Moniruzzaman and Khan NI shows surgical intervention required in 04(80%) patients out of 05 patients.[15] Though the number of filarial patients is very high in this region only 14 cases of surgical complications of filariasis were found in the present study. In the year 2009, the number of patients with the lower limb, upper limb, and scrotal swelling caused by filariasis in the Rangpur district was respectively 4555, 1837, and 6137[16].

Conclusion:

Surgical complications of ascariasis appeared as a commonest parasitic disease of surgical practice in our country followed by amoebic liver abscess, a surgical manifestation of filariasis, and hydatid cyst of liver. These diseases are concerned with a lot of health problems in our country and mortality and morbidity of these diseases have great influences on our daily life.

Limitation:

This was a single-center study but parasitic diseases are endemic in different parts of this country. So the study may limit the ability to reflect the generalized population and other ethnic groups. Also, the small sample size was a drawback. A modest attempt may be made to a multi-center study of different parasitic diseases in Bangladesh.

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A 2-Year Review of Ruptured Uterus and its Outcome in Rangpur Medical College Hospital

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Abstract

Backgroud:
Uterine rupture is one of the major and preventable obstetric complications which contribute significantly to maternal and perinatal morbidity and mortality in the developing countries. Fortunately, uterine rupture is a preventable condition. In order to reduce maternal and perinatal mortality and morbidity it is essential to determine the risk factors for rupture uterus.

Objectives:
The aim of the study is to find out the obstetric risk factors, incidence, and the causes of uterine rupture, management modalities, and the associated maternal and perinatal mortality and morbidity.

Methods:
All the cases referred to the Rangpur Medical hospital with uterine rupture and cases delivered in the hospital with a ruptured uterus from January 2016 to December 2017 were included in the study. Age, parity, gestational age, mode of delivery, type of rupture, operative treatment, and the fetomaternal outcome was noted.

Results:
The incidence of rupture uterus in the present study was 9.9 per 1000 deliveries. Most of the patients were young with an age group of 25-29(38.6%), mean age 29.48 years and in 2nd and 3rd gravid (50.0%). Only 10(14.3%) of the patients were booked for antenatal care, the rest 60(85.7%) did not have any sort of antenatal care. Previous cesarean scar (41.43%) and injudicious use of oxytocin (17.14%) were common risk factors. Maternal mortality was 2.9% whereas blood loss of more than 1000ml in 58(82.8%) patients followed by surgical site infection (SSI) and perinatal mortality was also high (81.4%). Total abdominal hysterectomy was the commonest surgery performed.

Conclusion:
Uterine rupture constituted a major obstetric emergency in this study. An 'unbooked' status was a key associated factor. Proper antenatal care, early referral of patients with risk factors to centers equipped with facilities for surgical intervention, facilities for blood transfusion; careful monitoring of labour with partogram, judicious use of oxytocin will reduce the incidence of rupture uterus.

Keywords: Ruptured uterus, Etiology, Fetomaternal outcome

Introduction:

Uterine rupture during pregnancy is a rare event but is a life-threatening obstetric catastrophe leading to maternal and perinatal morbidity and mortality.[1,2] While it is rare in high-income countries, it remains a public health problem in low-income countries. Incidence of rupture uterus varies from 0.5 to 9 per 1000 deliveries. Uterine rupture is seen mostly during labour, but can occur during all trimesters of pregnancy.[3] Previously rupture of unscarred uterus secondary to neglected prolonged and obstructed labour was more common but with increasing rate of cesarean section, rupture of the scarred uterus has become more common. Uterine rupture during pregnancy is an obstetric emergency. It is most commonly associated with a scar on the uterus followed by multiparous patients with inadvertent use of oxytocin or obstructed labour. Congenital uterine anomalies, grand multiparity, previous myomectomy, and cesarean scars, fetal macrosomia, abnormal lie, induction or augmentation of labour, neglected labour, instrumental delivery, external version, and uterine trauma are all associated with

increased risk of uterine rupture.[4-6] Immediate maternal complications of the ruptured uterus are hypovolemic shock, infection, and death while for the fetus, hypoxia, shock, anemia, and death may ensue.[7] Due to multiple reasons including, lack of health education, ignorance, or poverty; a significant proportion of women in our country do not get a regular antenatal checkup, preferring home delivery instead of hospital delivery. They visit the hospital in an emergency situation after prolonged dysfunctional labour when a traditional birth attendant fails to deliver the baby. The prolonged and obstructed labour increases the risk of uterine rupture and rupture of previous uterine scar.[8] The rising trend of cesarean deliveries has increased the risk of a ruptured uterus during a subsequent pregnancy. Fortunately, uterine rupture is a preventable condition. In order to reduce maternal and perinatal mortality and morbidity and to meet the Millennium Development Goals (MDGs) 4 and 5; it is essential to determine the risk factors for rupture uterus, still an important cause of maternal mortality and morbidity.[9] The aim of the present study is to identify the obstetric risk factors, incidence, and causes of ruptured uterus and define the associated maternal and perinatal mortality and morbidity in a tertiary care hospital of Bangladesh.

Methods:

This hospital based prospective, observational study was carried out in Rangpur medical college hospital at in-patient department of obstetrics and gynecology from January 2016 to December 2017. Inclusion criteria were (1) Any rupture after 28 weeks of gestation. (2) Any rupture occurring in the institute. (3) Cases delivered outside the hospital with rupture of uterus which is referred to the institution. Exclusion criteria were (1) Any rupture before 28 weeks of gestation. (2) Any rupture occurring as a result of road traffic accident or blunt injury or trauma to abdomen. Data were analyzed in term of total number of deliveries, incidence of rupture uteri, age, parity, gestational age, type and site of the rupture, its causes and operative treatment. Fetomaternal outcomes were also analyzed. Permission was taken from the Hospital ethical committee.

Results:

A total of 70 uterine ruptures were managed during the study period out of 7010 deliveries in the institution giving an incidence of 0.99% (1 in 100 deliveries). (Table-I). Among the 70 uterine ruptures, 26 cases were seen in unscarred and 44 in the scarred uterus (previous cesarean section) (Table-II). Complete uterine rupture is seen in 44 patients (23 in unscarred and 21 in scarred) and incomplete rupture in 26 patients (3 in unscarred and 23 in scarred). The anterior rupture was common in the scarred (34/37) whereas lateral rupture was common in the unscarred (18/28) (Table-II).

Table-I: Distribution of the number of cases and incidence of Rupture Uterus

Year	No.of Cases	Number of Deliveries	Incidence (Per 1000 deliveries)
2016	29	3250	8.9
2017	41	3760	10.9
Total	70	7010	9.9

Table-II: Type and Site of Rupture

	Unscarred (n=26)	Scarred (n=44)	Total (n=70)
Type of Rupture			
Complete uterine rupture	23	21	44
Incomplete rupture	3	23	26
Total	26	44	70
Site of rupture			
Anterior	03	34	37
Lateral	18	10	28
Fundal	05	00	05
Total	26	44	70

The age of the patients was ranged from 20 to 40 years. Patients aged 25-29 years had the highest incidence of uterine rupture (38.6%). Most of the patients were young with a mean age of 29.48 years. The oldest individual was 40 years and the youngest was of age 20 years. The highest incidence of uterine rupture was seen in multiparous women. Maximum patient being in 2nd and 3rd gravid (50.0%) with a mean of 3.4 and the highest parity was of 9th. Only 10 (14.3%) of the patients were booked for antenatal care, the rest 60(85.7%) did not have any sort of antenatal care (Table-III).

Table-III: Socio-demographic characteristics of the patients (n=70)

Characteristics	Frequency (n)	Percentage (%)
Age (Years)		
20-24	09	12.9
25-29	27	38.6
30-34	14	20.0
35-39	15	21.4
40-44	05	7.1
Parity		
Primiparous (Para-1)	22	31.4
Multiparous (Para 2-3)	35	50.0
Grand multiparous (Para 4 or more)	13	18.6
Booking status		
Booked	10	14.3
Unbooked	60	85.7
Education		
None	13	18.6
Primary	33	47.2
Secondary	19	27.1
Degree	05	7.1
Occupation		
Housewife	57	81.4
Service holder	13	18.6
Gestational Age (Weeks)		
28-32	8	11.43
33-36	17	24.29
37-40	45	64.28

Previous cesarean scar (41.43%) and injudicious use of oxytocin (17.14%) were the commonest precipitating factor causing a uterine rupture in our study followed by grand multiparity and obstructed labour (Table-IV).

Table-IV: Etiological factors attributable to uterine rupture (n = 70)

Etiology	Frequency (n)	Percentage (%)
Previous LUCS	29	41.43
One LUCS	17	24.29
Two LUCS	10	14.28
Three LUCS	02	2.86
Obstructed labour	05	7.14
Grand multiparity	10	14.28
Injudicious use of Oxytocin	12	17.14

Various types of surgical procedures were performed on patients with uterine rupture. Total abdominal hysterectomy was needed in 38 (54.3%) patients (23 in unscarred and 15 in scarred) whereas repair and tubal ligation was possible in 5(7.1%) patients (3 in unscarred and 2 in scarred) (Figure-1).

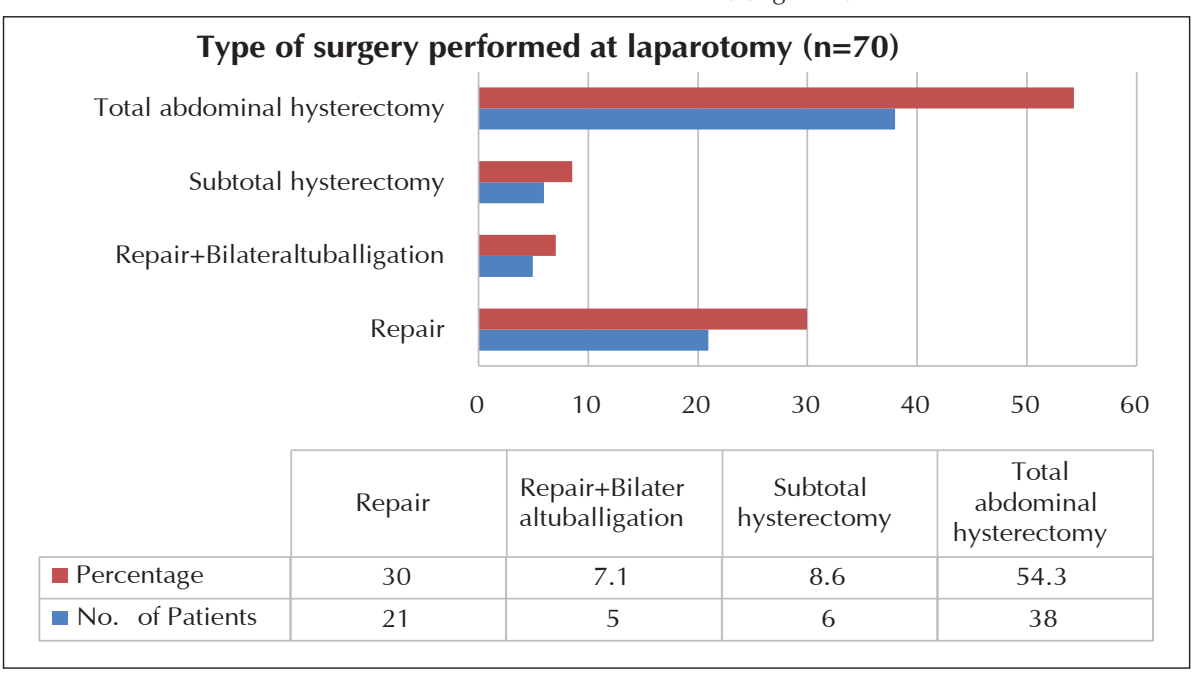
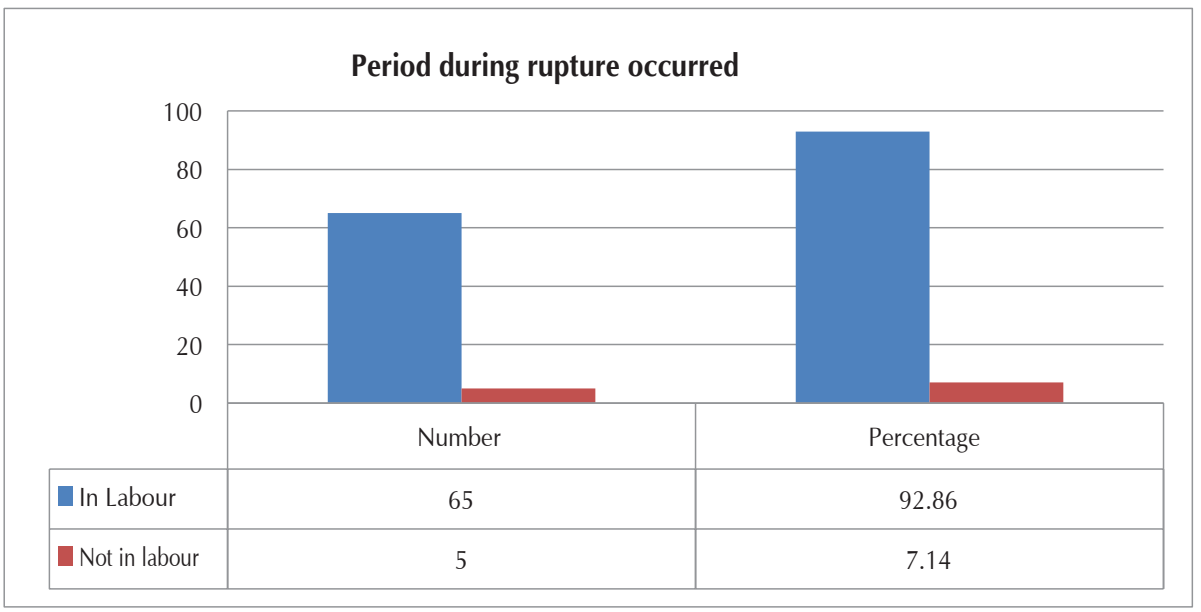


Figure-1: Type of surgery performed at laparotomy (n=70)

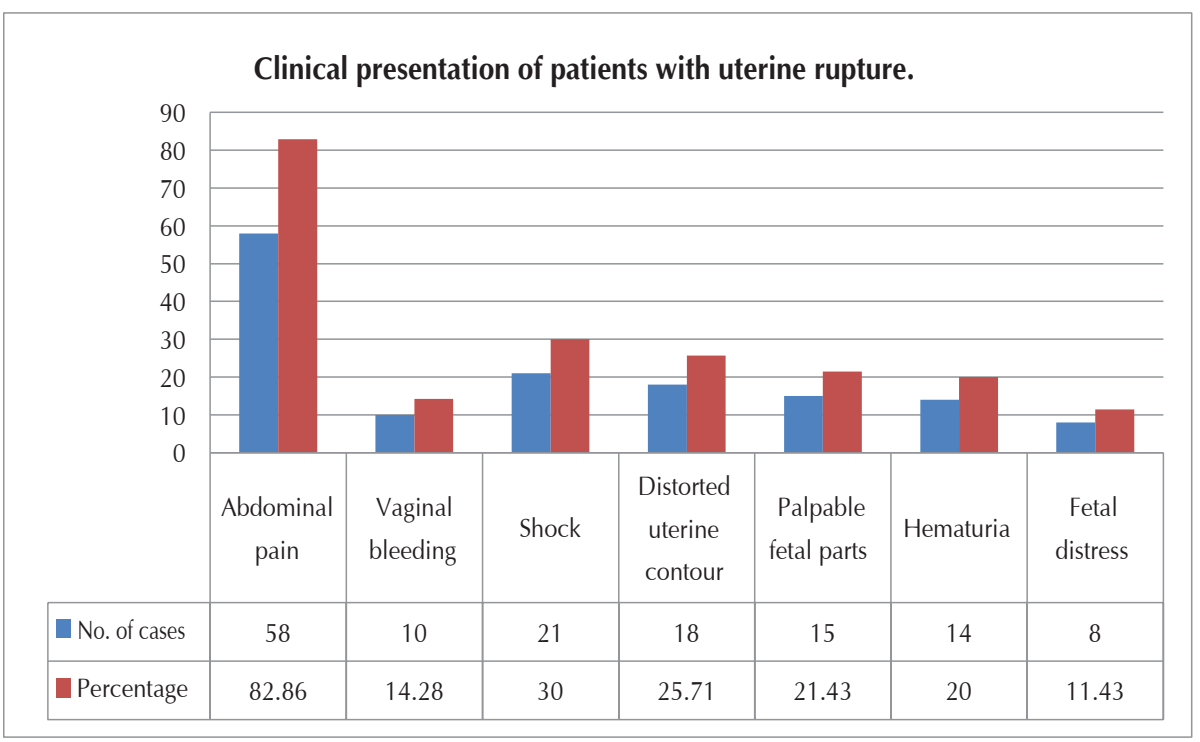
Most of the patients were in labour at the time of rupture (92.86%), whereas 5 (7.14%) patients with prior one or two lower segments cesarean section were not in labour (Figure-2).

The clinical presentations of the patients with rupture of the unscarred uterus were more dramatic with extensive tears, hypotension, and shock. On the other hand, ruptures of the scarred uterus were usually incomplete and transverse (Figure-3).



	Number	Percentage
In Labour	65	92.86
Not in labour	5	7.14

Figure-2: Period during rupture occurred



	Abdominal pain	Vaginal bleeding	Shock	Distorted uterine contour	Palpable fetal parts	Hematuria	Fetal distress
No. of cases	58	10	21	18	15	14	8
Percentage	82.86	14.28	30	25.71	21.43	20	11.43

Figure-3: Clinical presentation of patients with uterine rupture.

There were only 2 (2.9%) maternal mortality whereas blood loss of more than 1000 ml in 58 (82.8%) patients leaded the list as the morbidity followed by surgical site infection (SSI).Most of the patients received blood transfusions either intraoperatively or postoperatively. Perinatal mortality was high (81.4%) among them 74.3% was fresh stillbirths (Table-V).

Table-V: Complications, maternal and fetal outcome.

Complications	Frequency	Percentage
Blood loss (>1000ml)	58	82.8
Urinary Bladder injury	03	4.3
Surgical site infection (SSI)	12	17.1
Maternal Outcome		
Mother alive	68	97.1
Maternal death	02	2.9
Perinatal Outcome		
Fresh stillbirths	52	74.3
Macerated stillbirths	05	7.1
Baby alive	13	18.6

Discussion:

Rupture of gravid uterus is a catastrophic event which affects the reproductive function of the woman. It is a major contributor to the maternal and perinatal morbidity and mortality. It is associated with an environment where there is inadequate obstetric services and delivery is either unsupervised or conducted by unskilled birth attendants coupled with poor health seeking behavior. An incidence of 1 in 100 deliveries (0.99%) reported in this study is high compared with an incidence of 1 in 131 reported in Uganda.[10] This incidence is high when compared with another Nigerian study with an incidence of 1 in 258.[11] In addition, skilled obstetric care is limited and relatively expensive. Furthermore, a woman with previous cesarean delivery would prefer attempted vaginal delivery with an unskilled attendant to undergo another cesarean section regardless of the inherent health threat.[7,12-14] Ignorance and poor socioeconomic status are the major factors associated with the high incidence of uterine rupture in this setting. Majority (85.7%) of the patients in this study were unbooked. The occurrence of uterine rupture among mostly unbooked patients has also been noted in other studies.[7,12,15-18] The differences in the level of obstetric practices, availability, and utilization of the essential obstetric care services would account for the persistent high rate of uterine rupture in our environment and its rare occurrence in the developed economies. Other contributing factors include transportation difficulties and poor attitude of healthcare providers.[12,19] Thus, there is an urgent need for good communication network between the tertiary health institutions and the peripheral health units to ensure proper referral of the complicated cases. There were two maternal deaths in this study giving a mortality of 2.9%, both were unbooked and due to blood loss. Late presentation to the hospital is a major cause of this poor prognosis. This late presentation could be as a result of poverty, delayed referral, poor transport network, and poor ambulance services. The high perinatal mortality rate recorded in this study supports the preposition that uterine rupture is a major cause of maternal and perinatal morbidity and mortality in our environment.[13] Similar high perinatal mortality rate has also been reported in other studies.[12,16]

Conclusion:

Uterine rupture still constitutes a major obstetric complication, and inadequate utilization of antenatal services is a major contributory factor. Thus, efforts need to be made to improve proper utilization of limited health facilities, by increasing the socioeconomic status of women, providing easy access to emergency obstetrics care as well as improving the communication and transportation systems. There is also a need for the proper education of females about the associated risk after a previous cesarean section if pregnancy and labor are unsupervised in the next confinement. Health education and counseling of potential and expectant mothers would be of immense significance.

Conflict of interest:

The authors have no conflicts of interest to disclose.

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Original Article

Pregnancy Outcome in Preeclampsia with Impaired Liver Functions

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Abstract

Background:
Preeclampsia is a multi-system disorder that can affect 5-8% of all pregnancies and is a major contributor to maternal and perinatal morbidity and mortality. There is no single liver function test to fulfill all the criteria for a good predictor of preeclampsia.

Objective:
To determine the outcome of pregnancy in preeclampsia with impaired liver functions.

Methods:
This analytic observational study was carried out in the Department of Obstetrics and Gynaecology in Rangpur Medical College Hospital, Rangpur, from January 2018 to December 2018. 20 preeclamptic patients with impaired liver function were comprised as group A and 80 preeclamptic patients with normal liver function were comprise as group B. AST, ALT, Alkaline phosphatase, PT serum bilirubin, serum creatinine, and urine for albumin were tested and compared.

Results:
Out of these 100 study subjects serum bilirubin, Alkaline phosphatase, AST, ALT, Prothrombin time were more deranged in patients with impaired liver function (group A) than group B. Maternal and perinatal complications were higher among group A than group B.

Conclusion:
Impaired liver functions in preeclampsia adversely affect pregnancy outcome(in the form of pulmonary oedema, HELLP syndrome, DIC, PPH, Renal dysfunction, Abruptio placentae, Maternal mortality, LBW baby, Fetal asphyxia, IUFD, IUGR, NICU admission, Perinatal death. Therefore prior information of liver function tests in such patients may help to reduce perinatal & maternal morbidity & mortality.

Keywords: Preeclampsia, Liver functions

Introduction:

Preeclampsia is the most challenging clinical entity affecting both mother and fetus. It is a predisposing factor for maternal as well as perinatal morbidity and mortality. The incidence of preeclampsia in developing nations has been reported to be around 4-18%.[1] Preeclampsia is defined as pregnancy-specific syndrome observed usually after 20 weeks of gestation with systolic blood pressure ≥140mmHg and diastolic blood pressure ≥ 90 mmHg accompanied by significant proteinuria with or without edema. Severe preeclampsia is associated with elevated blood pressure ≥160/110 mmHg, on two occasions at least 6 hrs apart, on bed rest; with proteinuria ≥ 5gm in 24 hrs urine sample; along with other symptoms such as headache, visual disturbances, hyperreflexia, epigastric or right upper quadrant pain, vomiting, oliguria, impaired liver function and thrombocytopenia (HELLP Syndrome).[2] In most of the cases, about 75% of preeclampsia appear to be mild and 25% are severe.[3] In normal pregnancy, the LFT is either normal or slightly increase or decrease but within the normal range. Thus an increase in serum alanine aminotransferase (ALT), serum aspartate aminotransferase (AST), serum bilirubin & total bile acid concentration during pregnancy may be pathologic and should have further evaluation.[4] Serum albumin level, bilirubin concentrations are significantly low during the whole pregnancy, due to hemodilution and serum alkaline phosphatase (ALP) concentrations are considerably higher. The prothrombin time (PT) remains unchanged during pregnancy & serum fibrinogen increase in late pregnancy.[5] Abnormal LFT occurs in 3% of pregnancies and

preeclampsia is the most frequent cause. Prevalence of abnormal liver function test in pregnancy complicated by preeclampsia & eclampsia varies from 20-30%.[6] There is a marked increase in ALT, AST, and LDH. Hemolysis, elevated liver enzymes & low platelet count (HELLP Syndrome) have been well described which complicate up to 10% of cases of severe PE.[7] Women with preeclampsia associated with abnormal liver function have a greater chance of maternal and fetal complications than those with normal liver function. This study was conducted to evaluate pregnancy outcomes in preeclampsia with impaired liver functions. So, proper antenatal care, timely intervention by taking a prompt decision after diagnosis of the disease, and referral to a higher center and by giving appropriate treatment at that center may reduce maternal and perinatal morbidity and mortality.

Methods:

This is an analytic observational study which was conducted on dept of Obst & Gynaecology in Rangpur Medical College Hospital, Rangpur, from January 2018 to December 2018. The study population was all the admitted patients after 28 weeks of gestation diagnosed as preeclampsia by history, thorough clinical examination, and relevant inves tigations. Patients with preexisting hepatic dysfunction, chronic kidney disease, and systemic disease were excluded. Investigations were carried out in this study include CBC, serum urea, prothrombin time, serum Bilirubin, alkaline phosphates (ALP), aspartate aminotransferase(AST), alanine aminotransferase (ALT), Prothrombine time (PT). Then the study population was divided into two groups. Group A consists of 20 patients with preeclampsia having impaired liver functions and Group B consists of 80 patients with preeclampsia having normal liver functions. Pregnancy outcomes were compared between these two groups. All the information was collected in a predesigned interview schedule. Data were analyzed using SPSS software version 23. A Chi-square test was done to see the significance of difference and p-value $p<0.05$ was taken as significant.

Results:

Consecutive 20 Preeclamptic patients with impaired liver functions were taken as group A and 80 preeclamptic patients with normal liver function were taken as group B. Age of the patient varied from 20-30 years (mean 25.65±4.75). The majority were from low socioeconomic status and primarily educated (Table-I).

All of them had a pregnancy of either the 2nd or 3rd trimester with a mean duration of gestational age 35.00±2 in group B and 31.44±2.4 in group A. Majority of the patient were not taking ANC (Table-II).

Table-I: Demographic profile of study subject (n=100)

Parameter	Preeclamptic mothers		X^2-value	p-value
	Group-A Impaired Liver Function (n=20)	Group-B Normal Liver Function (n=80)		
Age group (Years)				
<20	02(10%)	07(8.75%)		
20-30	15(75%)	48(68%)		
>30	03(15%)	25(31.25%)		
Mean ± SD	25.65±4.757	25.65±4.757	2.108	0.349 (NS)
Socioeconomic status				
Low	18(90%)	66(82.5%)		
Middle	02(10%)	11(13.75%)	1.030	0.597 (NS)
Upper	00(00)	03(3.75%)		
Level of education				
Illiterate	08(40%)	06(7.5%)		
Primary	09(45%)	51(63.75%)	14.196	0.003 (S)
SSC	02(10%)	14(17.5%)		
HSC	01(5%)	09(11.25%)		

Table-II: Patient profile of study subject (n=100)

Parameter	Preeclamptic mothers		X^2-value	p-value
	Group-A Impaired Liver Function (n=20)	Group-B Normal Liver Function (n=80)		
Gravida				
Primi	15 (75%)	59 (73.75%)	0.909	0.013 (NS)
Multi	05 (25%)	21 (26.25%)		
ANC				
Yes	03 (15%)	29 (36.25%)	3.320	0.068 (NS)
No	17 (75%)	51 (63.75%)		
Gestational age				
<34 weeks	07 (35%)	17 (21.25%)		
>34 weeks	13 (65%)	63 (78.75%)	1.658	0.198 (NS)
Mean±SD	31.44±2.439	35.00±2.645		

ALT level was normal in most of the group B patients according to normal range, while it was raised in100%of group A patients and it was significant (p<0.001). AST level was elevated among 70% of group A but none in group B. Serum bilirubin, Alkaline phosphatase, and Prothrombin time all are elevated in Group A rather than group B which was statistically significant (Table-Ill).

Table-III: Biochemical profile of study subject (n=100)

Parameter	Preeclamptic mothers		X^2-value	p-value
	Group-A Impaired Liver Function (n=20)	Group-B Normal Liver Function (n=80)		
Routine investigations				
Hb% (gm%)				
>10gm% <10gm%	00 (00) 20 (100%)	07 (8.75%) 73 (91.25%)	1.882	0.170 (NS)
Platelet count				
1.5-4.0 lack/µL <1.5 lack/µL	04 (25%) 16 (75%)	80 (100%) 00 (00)	76.190	<0.001 (S)
Proteinurea				
Trace + ++ +++	00 (00) 00 (00) 02 (10%) 18 (90%)	25 (31.25%) 00 (00) 09 (11.25%) 46 (57.5%)	8.913	0.012 (NS)
Liver Function Test				
Serum bilirubin				
0.1-1.2mg/dl >2mg/dl	02 10%) 18 90%)	80 (100%) 00 (00)	87.805	<0.001
Alkaline Phosphatase				
Normal (45-115µ/L) Raised (>115µ/L)	00 (00) 20 (100%)	56 (70%) 24 (30%)	31.818	<0.001 (S)
Alanine amino Transferase				
Normal (7-55µ/L) Raised (>55µ/L)	00 (00) 20 (100%)	56 (70%) 24 (30%)	76.190	<0.001 (S)
Aspartate amino Transferase				
Normal (8-48µ/L) Raised (>48µ/L)	06 (30%) 14 (70%)	80 (100) 00 (00)	65.116	<0.001 (S)
Prothrombin time				
Normal (12-14sec) Raised (>14sec)	13 (65%) 07 (35%)	80 (100%) 00 (00)	30.108	<0.001 (S)

Among them pulmonary edema is highest. Maternal mortality was 45% in group A and 3.75% in group B which was statistically significant, the majority of the cause of death were DIC & Pulmonary edema (p<0.001).(Table-lV)

Table-lV: Distribution of maternal outcome of the study subject (n=100)

Parameter	Preeclamptic mothers		X^2-value	p-value
	Group-A Impaired Liver Function (n=20)	Group-B Normal Liver Function (n=80)		
Mood of delivery				
VD	09 (45%)	55 (68.75%)	3.917	0.048 (S)
LSCS	11 (55%)	25 (31.25%)		
Maternal morbidity	20 (100%)	12 (15%)	53.125	<0.001 (S)
Pulmonary oedema	07 (35%)	06 (7.5%)	10.698	0.001 (S)
HELLP syndrome	05 (25%)	00 (00)	21.053	<0.001 (S)
DIC	04 (20%)	00 (00)	16.667	<0.001 (S)
PPH	04 (20%)	04 (5%)	4.891	0.027 (S)
Renal disfunction	02 (10%)	00 (00)	8.163	0.004 (S)
Abruppio placentae	00 (00)	02 (2.5%)	.510	0.475 (NS)
Maternal mortality	09 (45%)	03 (3.75%)	25.781	<0.001 (S)

No significant difference in birth weight of babies between group A and group B. 1 minute and 5 minutes APGAR scores were better in group B. Neonatal complications were more in group A compared to group B and it was statistically significant. Perinatal death was high in group A (25%) than in group B (5.0%) which was statically not significant (p>0.01) (Table-V).

Table-V: Distribution of fetal and perinatal outcome of the study subject (n=100)

Neonatal Issues	Preeclamptic mothers		X^2-value	p-value
	Group-A Impaired Liver Function (n=20)	Group-B Normal Liver Function (n=80)		
Live birth	15 (75%)	66 (82.5%)	.199	0.656 (NS)
VD	09 (45%)	55 (68.75%)	3.917	0.048 (S)
APGAR score (1 minute)	5.06±3.104 09 (45%)	7.76±1.216 54 (68%)	3.475	0.062 (NS)
APGAR score (5 minutes)	5.82±3.555 12 (60%)	8.73±1.387 66 (83%)	4.720	0.030 (S)
Low birth weight <2.5Kg	08 (40%)	25 (31.25%)	0.554	0.457 (NS)
Asphyxia	06 (30)	08 (10%)	5.316	0.021 (S)
IUD	07 (35%)	05 (6.25%)	12.524	<0.001 (S)
IUGR	08 (40%)	09 (11.25%)	9.373	0.002 (S)
NICU Adimission	10 (50%)	28 (35%)	1.528	0.216 (NS)
Death within 7 days	05 (25%)	09 (11.25%)	2.512	0.113 (NS)

Discussion:

This study was conducted in Obstetrics & Gynecology dept in Rangpur Medical College and Hospital, Rangpur is an important referral hospital of North Zone in Bangladesh. In the present study, the study population were 100 having preeclampsia, had been divided into two groups. Impaired liver functions 20 were in group A (case) and normal liver functions 80 were in group B(control). The younger age group is an important risk factor. Though it was a disease of the adolescent group in the present study, the mean age was 25.65±4.757 years in both groups are matched. The majority of the population was 20-30 years. These ages are more vulnerable due to early marriage and pregnancy in our country as compared to western countries. This age difference was not statistically significant (p>0.34). It is consistent with the study of Amit G et al. where the mean age was 25.12 ± 3.65 years. Maximum 82.82% of patients were between 20-29 years of age.[8] Also consistent with S Kishwaraet al in Bangladesh Medical Journal (2011).[9] In the present study, the majority came from low socioeconomic status which was statistically not significant (p<0.597). It correlates with the study of Savita Rani et al where 84% belong to low socioeconomic status.[10] Regarding educational background majority of the patient were primarily educated and very few were illiterate in both groups which were statistically significant (p<0.05). It is due to primary education being free in our country so, the majority of the people were primarily educated. This study was matched with the study of Cicih O, Lelly A. They showed that lowered educated women had the highest risk of preeclampsia compared to high education.[11] It was also consistent with Koido Pet al.[12] In this study, most of the population came from rural areas.Rural people are more vulnerable to developed preeclampsia because in a rural area there is a lack of ANC facilities, women are less empowered due to a lack of education and self-awareness. The study was conducted in Rangpur Medical College Hospital which is a public hospital where the maximum cases came from low affluent societies and referred from the different rural zone. It correlates with the study of Savita Rani Singhal et al where 84% had a rural background.[10] The incidence of preeclampsia was more in primigravid. This is comparable to Mac Gillivray which shows that primigravida has 15 times greater risk compared to multigravida[13] also correlates with Savita Rani Singhal et al where primigravida was 70%.[10] In the present study, 75% of group A and 63.75% of group B took irregular and no antenatal care at all. Group B comparatively took more ANC but it was not significant (p>0.068). According to Majhi et al 82.3% of patients did not have a regular antenatal check-up.[14] This indicates that low socioeconomic status, lack of education poverty, and inadequate antenatal check-up has a close relationship with preeclampsia and impaired liver function. The present study show mean gestational age of the mother was 31.44±439 and 35.00±2.645 weeks in group A and B respectively, which is statistically insignificant (p>0.0198). Amit G et al also observed similar findings with that of the present study, their study was also statistically not significant.[8] Barua found mean gestational age was 37.55 weeks.[15] This study indicates more the gestational age less the maternal and perinatal complications. Regarding the liver function test all the values are deranged in group A compared to group B which were statistically significant (p<0.001) which was consistent with Dilip KB al where ALT, AST, ALP & bilirubin were elevated respectively these are statistically significant (p<0.001).[16] This indicates preeclampsia is a pregnancy-related complication with a mortality rate of less than 1% when it is associated with impaired liver function maternal and perinatal outcomes are found poor. Regarding maternal outcome out of 20 patients in group A, 25% developed HELLP, 20% PPH, 10% renal dysfunction, 35% pulmonary edema, 20% DIC, and maternal mortality was 45% all were statistically significant (p<0.001). Abruption placenta was 2.5% in group B population which was statistically not significant (p>0.0475). As per Loi K et al[17] HELLP 6%, pulmonary edema 5%, ARF 14%, Abruption 2% were noted in preeclamptic patients with deranged liver function. As per Punneta M et al[18] support, these results were statistically significant (p <0.001).In the present study, 75% of group A and 82.5% of group B were live birth which was statistically not significant. In this study fetal complication is more in group A population compared to group B. Out of 20 patients in group A 30% developed fetal asphyxia, 40% IUGR, 25% IUD, and 25% perinatal death occur within 7days which was statistically significant. 40% were LBW and 50% of them need NICU admission which was not statistically

significant. Apgar score in both one minute and five minutes was deranged in group A. Apgar score in one minute was nonsignificant (p>0.062) and Apgar score in five minutes was statistically significant (p<0.05). This study was consistent with Savita Rani Singha et al.[10] So, from this study, it was found that nulliparous, primarily educated women with low socioeconomic status and lower gestational age group those who were not in antenatal care more prone to develop the impaired liver function. People with impaired liver functions showed adverse pregnancy outcomes.

Conclusion:

Though preeclampsia is not a totally preventable disease the devastating effect from its consequences can be prevented by regular antenatal care, proper screening of high-risk cases for prediction of risk factors, and taking appropriate management strategies. Creation of awareness by health education through much media, social motivation regarding female child education, nutrition, empowerment & employment. Early detection of high-risk individuals by well-trained medical personnel and timely referral to tertiary care centers will lead to improved perinatal and maternal outcomes.

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Original Article

Assessment of Socio-demographic Characteristics of the COVID-19 Patients with Diabetes Mellitus

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Abstract

Background:
COVID-19 is a highly infectious disease spreading all over the world since its appearance causing enormous sufferings and loss of human life specially among those who have suffered from Diabetes Mellitus along with it.

Objective:
The present study was aimed at to find out the socio-demographic characteristics among diabetic and non-diabetic COVID-19 patients 90 days after discharge from Combined Military Hospital, Dhaka.

Methods:
This retrospective cross sectional study was conducted among purposively selected 133 COVID-19 patients (39 diabetic and 94 non-diabetic) admitted in CMH, Dhaka from July 2020 to June 2021 with the objective to find out the association of socio-demographic characteristics of subjects with COVID-19 patients with Diabetes Mellitus. The data were collected through telephonic interview and medical records.

Results:
The study revealed that the mean age of the respondents were 48.0 years, 80.5% were male, 94.0% were Muslim, 96.2% were married, 30.8% had graduate and above level of education,78.2% had nuclear family, 88.0% reside in urban area. The mean family income was TK 32,250. Among the diabetic patients more than half (51.3%) were 60 and above age group, 48.7% were military retired personnel, 61.5% had family income TK<25,000. The association between exposure status with age (p=.000) and occupational status (p=.001), were found statistically highly significant. The risk exposure outcome among 60 years and above age group were higher among diabetic group (RR: 2.05, 95% CI 1.33-3.17).

Conclusion:
Health education measures to be taken to prevent and control the morbidity and mortality outcome among the diabetic group specially those who are aged, have poor level of education, low income group and retired personnel. However, to draw comprehensive inferences on this study, further research in this field is recommended.

Keywords: Covid-19, Diabetes mellitus, Socio-demographic characteristics

Introduction:

COVID-19 is an infectious disease caused by a newly discovered coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and first documented in Wuhan City, Hubei Province, China in December 2019 as an outbreak of pneumonia of unknown cause.[1] Like any other respiratory disease, COVID-19 is spread through air-droplets that are dispersed when an infected person talks, sneezes or coughs. It can be spread through close contact with an infected person or by contact with air droplets in the environment (on a surface for example) and then touching the mouth or nose.[1] So any crowded places and less air circulation with much people in a confined place like Shopping mall, Market, Cinema hall, Theatre, Restaurant, Gymnasium, School & Colleges where more people have the chance to come in close contact without health etiquette are more vulnerable to spread from man

to man. The spread of disease can be prevented by proper maintenance of hygiene and health etiquette. People of all ages can be infected. Older people (>60years), male and people with pre-existing medical conditions (such as diabetes) appear to be more vulnerable to becoming severely ill with the COVID-19 virus. When people with diabetes develop a viral infection, it can be harder to treat due to fluctuations in blood glucose levels and, possibly, the presence of diabetes complications. There appear to be two reasons for this. Firstly, the immune system is compromised, making it harder to fight the virus and likely leading to a longer recovery period. Secondly, the virus may thrive in an environment of elevated blood glucose. Psycho-social complains are also not less to the patients suffered from COVID-19. So, all these issues need to be addressed in a scientific way.

In a meta-analysis in Bangladesh between 1st January 1995 to August 2019 the pooled prevalence of diabetes in the general population was 7.8% (95% CI: 6.4–9.3). In a sample of 56452 individuals, the pooled prevalence of pre-diabetes was 10.1% (95% CI: 6.7–14.0; 17 studies).[2] The mortality and morbidity of the disease is very high in developed countries as well as Bangladesh faces significant challenges in combating COVID-19 as it is a densely populated country. Outcome patterns of COVID-19 are different in different parts of the world. Diverse risk factors influence the outcomes of COVID-19. Study on morbidity and mortality outcome of COVID-19 patients are very scarce in our country and as such the topic will be a baseline study for the future researcher on this subject. So, the present study was aimed at to find out the socio-demographic characteristics among diabetic and non-diabetic COVID-19 patients 90 days after discharge from Combined Military Hospital, Dhaka.

Methods:

This was a retrospective cohort study performed in the Combined Military Hospital (CMH), Dhaka, situated inside Dhaka Cantonment between the period of 01 January 2021 to 31 December 2021. The study populations were 133 RT-PCR laboratory confirmed positive COVID-19 patients (both gender) who admitted in the CMH and discharge from CMH, Dhaka within 90 days. This includes all Armed Forces COVID-19 patients (Army, Navy Air Force) incluiding their families and patients [Civilian Non-Entitled (CNE) patients and Relative Entitled (RE) patients] those who were attending Combined Military Hospital, Dhaka. Among the 133 COVID-19 patients, 39 were suffering from Diabetes Mellitus (DM) and 94 not suffering from DM. The subjects with psychological abnormality, severely ill patients and who did not respond to a phone call on three separate occasions were excluded from the study. An interview schedule was prepared and used for data collection and the data were collected by a semistructure questionnaire.After getting approval of the research proposal from the honourable Protocol approval Committee, AFMI formal permission was obtained from the Commandants CMH, Dhaka through proper channel for data collection. First necessary data were collected from Medical record office CMH, Dhaka.After explaining the purpose of the study to the respondents and obtaining verbal consent from them, data collection were carried out by the researcher through telephonic interview by asking question in Bangla. Data were collected from 1100 hours to 1300 hours everyday except Govt. holidays. Before asking sensitive question good rapport was made with the respondents by the researcher. For the present study, age, sex, marital status, occupational state, religion, family income, residence, type of family, size of the family and educational status of the patients were collected by face to face or telephonic interview.Then the data were analyzed with the help of software SPSS window program version 23. P-value <0.05 was considered as statistically significant,

Results:

Among 133 cases 39 were exposed (suffering from Diabetes Mellitus) and 94 were Non-exposed (Not suffering from Diabetes Mellitus) as shown in Figure-1.

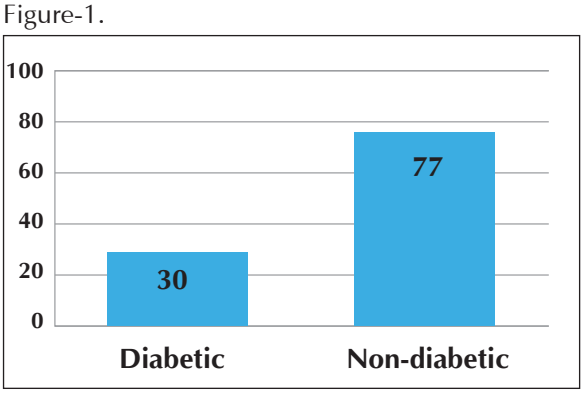


Figure-1: Distribution of type of participants by exposure to diabetes mellitus

Respondents were selected from different categories of people including officers, soldiers, families, civilians and retired personnel from Armed Forces to find out the representations of the populations of all classes of socio-economic and socio-demographic background. The representation of different categories of patients is shown in Figure-2.

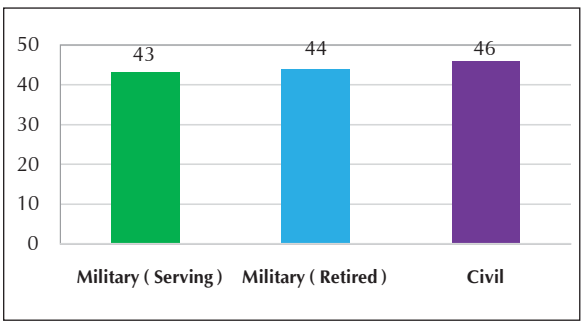


Figure-2: Distribution of type of patients by sources

Among the Diabetic group, Military serving 1(2.56%), Military Retired 19(48.72%) and Civil 19(48.72%) and among the non-diabetic respondents Military serving were 42(44.68%), Military Retired 25(26.60%) and Civil 27(28.72%). Totally, Military serving were 43(32.33%), Military Retired 44 (33.08%) and Civil were 46(34.59%).
Of all the respondents male were 107(80.5%) and female were 26(19.5%). Among diabetic patients male were 30(76.9%) and female were 9(23.1%). And in non-diabetic patients male were 77(81.9%)) and female were 17(18.1%) as shown in Figure-3.

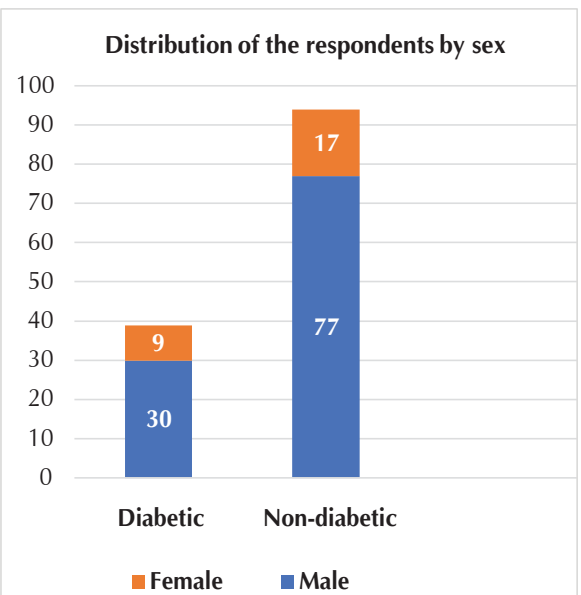


Figure-3: Distribution of the respondents by sex

Table-I showed the socio-demographic characteristics of both groups. Among the 133 respondents the age ranged from 22 to 81 years and maximum were 37 (27.8%) in 50-59 age group and minimum were 16 (12%) in 20-29 age group among the population. Mean ± SD was 48.01 ± 14.16 years. Among the exposed maximum were 20 (51.3%) in 60 and above age group and minimum were 2 (5.1%) in 30-39 age group. Mean ± SD was 58 ± 13.90 years. On the other hand, among non-exposed maximum were 25 (26.6%) in each 30-39 and 50-59 age group and minimum were 13 (13.8%) in the 60 and above age group. The Mean age of the respondents was 43.87 ± 13.90 years. The association between age and exposure status were statistically highly significant (RR: 2.05, 95% CI: 1.33-3.173, p=.000).

Among the respondents maximum 42 (31.6%) were HSC qualified and minimum 16 (12.0%) were Graduate. Among the exposed maximum were secondary and Masters level 10 (25.6%) each and minimum were Graduate 4(10.3%). On the other hand, among non-exposed maximum were H.S.C qualified 35 (37.2%) and minimum were SSC and Graduate12 (12.8%) each as shown in Table-I. Regarding occupation majority of the respondents was service holder 69(51.9%) and minimum were Business 1 (0.8%). Among the exposed maximum were retired 22 (56.4%) and none were in the business group 0(0.0%). Among non-exposed maximum were service holder 58 (61.7%) and minimum were business 1 (1.1%). The association between occupational status and exposure status were statistically highly significant (p=.001) as shown in Table-I.

Majority of the respondents were Muslim 125 (94.0%). Among diabetics maximum were Muslim 38 (97.43%) and 1 (2.6%) were Hinduism. Among non-exposed Muslim were 87 (92.6%) and minimum was from Buddhism 1(1.1%).Majority of the respondents (96.2%) were married. Among diabetic 39 (100%) were married and among non-diabetic 89 (94.7%) were married and 5 (3.8%) were unmarried. Regarding monthly family income of the respondent maximum 86(64.66%) had <25,000 Tk monthly family income and minimum were 1(0.8%) >50,000 Tk. Among exposed maximum 24 (61.53%) from <25,000 Tk income group whereas among non-exposed were 62 (65.96%) from <25,000 Tk income group and 1 (1.1%) from >50,000 Tk income group (Table-I).

Table-I: Socio-demographic characteristics of both groups (n=133)

Variables	Diabetic	Non-diabetic	Total	p-value
Age group (Years)				
20-29	0(0.0%)	16(17.0%)	16(12.0%)	
30-39	2(5.1%)	25(26.6%)	27(20.3%0	
40-49	5(12.8%)	15(16.0%0	20(15.0%)	0
50-59	12(30.8%0	25(26.6%0	37(27.8%)	
60 and above	20(51.3%)	13(13.8%)	33(24.8%)	
Total	39(100%)	94(100%)	133(100%)	
Educational Level				
Secondary	10(25.6%)	20(21.3%)	30(22.6%)	
S.S.C	8 (20.5%)	12(12.8%)	20(15.0%)	
H.S.C	7(17.9%)	35(37.2%)	42(31.6%)	0.192
Graduate	4(10.3%)	12(12.8%)	16(12.0%)	
Masters	10(25.6%)	15(16.0%)	25(18.8%)	
Total	39(100%)	94(100%)	133(100%)	
Marital status				
Married	39(100%)	89(94.7%)	128(96.2%)	
Unmarried	0(0.0%)	5(5.3%)	5(3.8%)	0.142
Total	39(100%)	94(100%)	133(100%)	
Religion				
Muslim	38(97.4%)	87(92.6%)	125(94.0%)	
Hinduism	1(2.6%)	6(6.4%)	7(5.3%)	
Buddism	0(0.0%)	1(1.1%)	1(0.8%)	0.5361
Total	39(100%)	94(100%)	133(100%)	
Occupation				
Service	11(28.2%)	58(61.7%)	69(51.9%)	
Retired	22(56.4%)	22(23.4%)	44(33.1%)	
Business	0(0.0%)	1(1.1%)	1(0.8%)	0.001
Housewife	6(15.4%)	13(13.8%)	19(14.3%)	
Total	39(100%)	94(100%)	133(100%)	
Monthly family income (Taka)				
<25,000	24(61.53%)	62(65.96%)	86(64.66%)	
25000-50000	15(38.5%)	31(33.0%0	46(34.6%)	0.162
>50,000	0(0.0%)	1(1.1%0	1(0.8%0	
Total	39(100%)	94(100%)	133(100%)	
Place of residence				
Urban	37(94.9%)	80(85.1%)	117(88.0%)	
Rural	2(5.1%)	13(13.8%)	15(11.3%)	0.386
Suburban	0(0.0%)	1(1.1%)	1(0.8%)	
Total	39(100%)	94(100%)	133(100%)	
Housing Condition				
Pacca	35(89.7%)	80(85.1%)	115(86.5%)	
Kancha	4(10.3%)	7(7.4%)	11(8.3%)	0.198
Semi pacca	0(0.0%)	7(7.4%)	7(5.3%)	
Total	39(100%)	94(100%)	133(100%)	

The study revealed that regarding types of family of the respondents 104 (78.20%) have nuclear type of family and 29(21.80%) are from joint family. Among exposed 32 (82.05%) were nuclear and 7(17.94%) were joint type of family. Among the non-exposed group 72(76.59%) were nuclear and 22 (23.40%) were in the joint family group. The result is shown in figure-4.

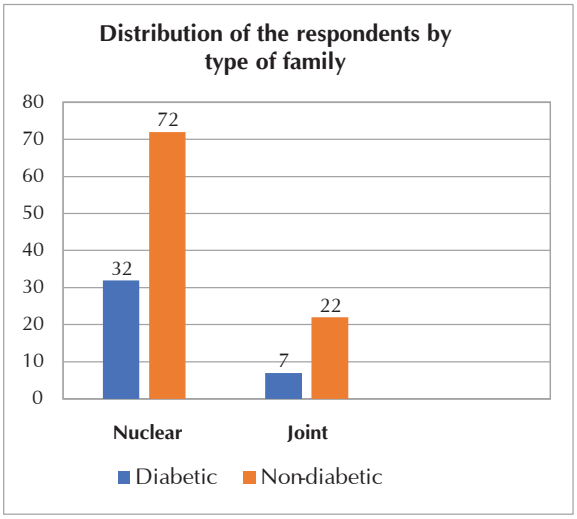


Figure-4: Distribution of the type of family of the respondents

According to the place of residence maximum 117(88.0%) were from urban area and minimum were from suburban area 1(0.8%). Among exposed maximum were in urban group 37(94.9%) and none were from suburban group 0(0.0%). Among non-exposed group maximum were from urban group 80(85.1%) and minimum were from suburban group 1(1.1%) (Table-I).

As regarding the housing condition of the respondent maximum have Pacca house 115(86.5%) and minimum have semi pacca house 7(5.3%). Among exposed maximum have Pacca house 35 (89.7%) and none have semi pacca house 0(0.0%) whereas among non-exposed it is 80 (86.5%) and 7(7.4%) respectively (Table-I).

Discussion:

In the present study it was found that the mean age of the respondents was 48.02 years (age ranges from 22-81 years). The mean age of the diabetic and non-diabetic respondents was 58 years and 43.87 years respectively. This study finding does not accord with the study finding conducted by Islam et al[3] on risk factors associated with morbidity and mortality outcomes of COVID-19 patients on the 28th day of the disease course: a retrospective cohort study in Bangladesh at NIPSOM, Bangladesh (2020) where they found the median age 37.0 years. Another study conducted by Mowla et al[4] on clinical profile of 100 confirmed COVID-19 patients admitted in Dhaka Medical College Hospital, Dhaka, Bangladesh and Ahsan et al[5] conducted a study on demographic and clinical profile with early outcome of critically ill COVID-19 patients admitted in an ICU of BIRDEM, Dhaka, Bangladesh in 2020 where they found that mean age of the respondents were 41.7 years and 63.6 years respectively. Another study conducted by Chowdhury et al[6] on knowledge, attitude and preventive practice towards COVID-19 among selected units of Dhaka Cantonment (2021) where the mean age of the respondents was 31.09 years. The cause of differences of age in the study may be due to differences in study population, sample size, research design and sociodemographic characteristics of the respondents.Among all respondents the most (80.5%) were male and 19.5% were female. This study finding was dissimilar with the study conducted by Ahmed et al[7] at CMH, Dhaka during March-April 2020 where male and female distribution among 201 cases were 90% and 10% respectively. Morshed et al[8] at KGH found among the respondents 71.8% male and female 28.2% respectively. The difference may be due to study population, sample size and sociodemographic characteristics of the respondents.Regarding educational qualification of the respondent 31.6% were HSC qualified, 22.6% were secondary level and 15% were SSC qualified. In the study of Chawdhury et al[6] conducted on soldiers in selected units of Dhaka cantonment and found 72.6% are HSC qualified as because their study was based on serving soldiers. The majority was HSC because the study was conducted at a tertiary level Military Hospital place where entitled patients were treated and most of the patients are soldiers of Bangladesh Armed Forces who are SSC qualified and after enrollment, they complete HSC within the organization.The study revealed that regarding occupation more than half (51.9%) were serving personnel i.e. 51.9%, retired persons were 33.1% and 14.3% were housewife. This is because Military Hospital treats serving personnel, their families and retired persons. Islam et al[3] found 32.5% service holders at NIPSOM where study was conducted in Bangladeshi general population. The association between occupation and exposure status were statistically highly significant (p=.001). This was because the study was conducted among the entitled patients of defense services, most of them were serving and retired personnel.It was evident from the study that among the respondent majority (94%) was Muslims. Among the exposed

(97.4%) and among non-exposed (92.6%) were also Muslims. However, the difference of religion between exposed and non-exposed was not statistically significant (p>0.05). As per Bangladesh Bureau of statistics (BBS) -2021, Muslims are 88.4% and 11.6% are other religion which have similarity with this finding.[9] Highest number of participants belongs to Islam because of predominance of Muslim population in Bangladesh.The study revealed that significant majority, 96.2% respondents are married and unmarried were only 3.8%. Among exposed (100%) and among non-exposed (94.7%) were married. Islam et al[8] found in their study in Bangladesh 72.6% married. The majority of the respondent are married in our study because of Military soldiers are eligible to get married after completion of 6 years of service or when attain 26 years of age. Similar findings were revealed by Chawdhury et al[6] where they found 80% respondents were married.Regarding monthly family income of the respondent 64.66% had <25,000 TK monthly family income. Among exposed 61.53% had TK <25,000 Tk monthly family income whereas among non-exposed it was 65.96%. The income between 2500-50000 taka was 34.6%. Islam et al[3] found that the majority 37.0% had monthly family income between TK.10 000 and 30 000, and their to less than TK 25000.The study revealed that regarding types of family of the respondents 78.20% had nuclear and 21.80% had joint type of family. Among exposed nuclear and joint family were 82.05% and 17.94% whereas among the non-exposed it was 76.59% and 23.40% respectively. The study commensurate with the study of Islam et al[8] conducted at NIPSOM, Dhaka, Bangladesh where they found nuclear family 72.75% and joint family 27.25% respectively.According to the place of residence (88.0%) were from urban area and 12% were from suburban and rural area. As regarding the housing condition of the respondent (86.5%) have pacca house at their residence and rest (5.3%) have semi-pacca or kancha house. According to BBS report 2021 national statistics of Bangladesh is households in pucca buildings constitute 23.9 percent of the total. Nearly 40 percent of the households in the urban area and only 10.6 percent of the households in the rural have pucca. Semi-pucca living structures are also found in about a quarter (26.7%) of the households. Among the reported structures, 22.7% of the households in the rural area and 31.6% in the urban area were semi-pucca.[9] The difference of more urban setting in our study may be due to increase of family accommodations by Bangladesh Armed Forces at different Cantonments of the country. On the other hand, due to economic development of the country and demographic transition, the number of kancha house is gradually decreasing in our country. However, this research was only based on a single-centered, Hospital- based study. Therefore, the study was restricted to the patients attending at a selected tertiary level Military Hospital, Dhaka only. Data collection was done in pandemic scenario of COVID-19 which hampers to collect data both the respondents and researcher so, sample size was small. Socio-demographic data were recorded from the Medical record system of CMH, Dhaka and thereby the study faces problem to get complete information on some variables. As patients were discharged from Hospital so face to face interview was not possible as such the requirement for written consent was waived because of the retrospective study design. The study was conducted through non-probability type of purposive sampling which may not qualify the validity of the finding.

Conclusion:

The reason for worse prognosis in people with diabetes is likely to be multifactorial, thus reflecting the syndromic nature of diabetes. Age, sex, ethnicity, comorbidities such as diabetes all probably contribute to the risk of worse outcomes. Based on the findings and discussion of the study, the following recommendations are put forwards for consideration by the policy makers, health administrators, public health specialist and future researchers for controlling DM in COVID-19 cases.Special attention should be taken for monitoring and surveillance of COVID-19 specially among the age group 60 and above, male, civil, military retired persons as much of this respondent were in this group.

1. Steps should be taken for the health of low-income group and urban populations.
2. So adequate preventive measures and more precautions should be taken who have DM in comparison to those who have not DM.
3. Further in-depth study on this aspect may be conducted on larger sample size to find out the associAation between Diabetes Mellitus with COVID-19.

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Evaluation of Space Occupying Lesions in Liver by Ultrasonogram Guided Fine Needle Aspiration Cytology in a Tertiary Care Hospital

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Abstract

Background:

The differential diagnoses of space occupying lesions (SOL) of the liver are wide. It ranges from infectious or inflammatory processes to benign and malignant liver lesions which include primary and metastatic tumors. As the clinical, biochemical and imaging modalities have limitations in the accurate diagnosis, US guided fine needle aspiration cytology places an important role in the categorization of liver SOL.

Objective:

To evaluate the etiology of the different space occupying lesions of liver diagnosed on US guided FNAC presenting at a tertiary level hospital.

Methods:

This prospective study was conducted in the Department of Gastroenterology of Rangpur Medical College Hospital from Jan 2021 to Dec 2021 over a period of one year. A total of 52 patients with space occupying lesion (SOL) of the liver mass were included in this study. FNAC was carried out under the guidance of ultrasonography for each patient. Results of all patients were collected and tabulated. Statistical analysis was performed on tabulated data.

Results:

Mean age of the patients was 54.13 ± 10.57 years with the range of 30-85 years. The majority of the patients were between the ages of 41 and 60. Males (82.7%) were predominant than females (17.3%). The majority of the patients were engaged in agricultural work. HBsAg was found in 8(15.4 %) of the patients, and Anti HCV was found in 1(1.9 %). The majority of SOL (44.2 %) were hepatocellular carcinoma, followed by metastatic adenocarcinoma (17.3%), adenocarcinoma (11.5%), malignant cell (9.6%), inflammatory lesion (5.8%), chronic granulomatous inflammation (3.8%), metastatic carcinoma (3.8%), hepatic SOL (1.9%), and CLD (1.9%).

Conclusion:

Most common SOL of liver was hepatocellular carcinoma and adenocarcinoma.

Keywords: Space occupying lesions (SOL) of the liver, Ultrasonogram guided FNAC, Hepatocellular carcinoma.

Introduction:

Liver diseases are a widespread public health issue around the world. A variety of diseases, including metabolic, infectious, and neoplastic diseases, can affect the liver. Liver diseases are classified into two types: diffuse and focal lesions. Primary liver tumors (benign and malignant), metastatic deposits, congenital and acquired cysts, and abscesses are the differential diagnoses for focal lesions.[1] Clinically and biochemically, these diseases are suspected. Appropriate treatment is dependent on accurate diagnosis, but lesion evaluation is a common clinical problem.[2] Imaging techniques and serological markers can help narrow down the differential diagnosis. Radiologically, they appear as either diffuse involvement or focal lesions, and they are also known as Space Occupying Lesions (SOLs). Fine needle aspiration cytology (FNAC) is

most commonly used to diagnose malignant focal lesions, both primary and secondary. When radiology is inconclusive, FNAC is used to rule out neoplasm from an inflammatory lesion.[3-5] Fine Needle Aspiration Cytology (FNAC) has been shown to be a highly effective methods of obtaining tissue for diagnosis from a wide range of body sites, including superficial and deep lesions. It was first used in the liver in 1985. FNAC is a quick, low-cost, and minimally invasive technique for diagnosing liver SOLs with few complications.[6] FNAC guided by ultrasonography (USG) is an accurate methods for determining a definite tissue diagnosis in focal liver lesions.[7] Occasional inflammatory lesions or diffuse liver diseases may mimic mass like lesions or appear as non-homogenous regions on radiographs. Such lesions can also be well sampled by FNA to rule out neoplasm from differential diagnosis.[8] According to literature, the diagnostic accuracy of FNAC for liver lesion is greater than 85% and in malignant lesion its sensitivity is around 90%(67-100%).[9] The aim of the present study was to evaluate the different liver SOLs diagnosed on FNAC presenting at our hospital.

Methods:

The prospective observational study was carried out in the Department of Gastroentarology of Rangpur Medical College Hospital from January 2021 to December 2022 over a period of one year. The patients with suspected space occupying lesions of the liver were enrolled and their preliminary clinical and personal data were recorded. All these patient underwent CBC, liver enzyme, bilirubin and ultrasonography of abdomen that illustrated the sonographic findings of hepatobiliary system. The study was approved by Institutional Ethics Committee for its performing details. A total of 52 cases were taken with following inclusion and exclusion criteria. Patients with radiologically diagnosed SOL in liver and suspected as a case of hepatic neoplasm were included in this study. This study excluded patients with bleeding disorders, a prolonged prothrombin time, a liver abscess, a cyst, or a haemangioma. Clinical data that was relevant to the case were recorded. Patients with a good coagulation profile who had a suspected hepatic neoplasm underwent ultrasound guided FNAC. FNAC was performed by an expert pathologist or radiologist in accordance with standard protocol, and USG guidance was provided by an expert radiologist. Several cytologic smears were prepared and fixed immediately in 95% alcohol. The smears were left in alcohol at least for 30 minutes at room temperature before staining. The residual material remaining after completion of cytological smears were fixed in 10% formalin and later processed to prepare paraffin embedded blocks. Papanicolaou stain was used to stain the produced smears. Hematoxyllin and eosin were used to stain cell blocks made from fixed sediment and bacterial agar. On the same day or the next day, a cytopathological analysis of the dyed slides of hepatic SOL was performed under a light microscope. Smears that were satisfactory had a sufficient number of representative cells from the target areas. The cytological diagnosis was compared using stained cell block sections.

Results:

Mean age of the patients was 54.13 ± 10.57 years with the range of 30-85 years. Most of the patients were within 41-60 years. Males (82.7%) were predominant than females (17.3%). Most of the patients were involved in agricultural work. (Table-I)

Table-I: Demographic profile of the study subjects (N=52)

Variable	Frequency (n)	Percentage (%)
Age (Years)		
≤40	6	11.5
41 - 50	16	30.8
51 - 60	16	30.8
>60	14	26.9
Mean ± SD (Min-max)	54.13 ± 10.57 (30 - 85)	
Gender		
Male	43	82.7
Female	9	17.3
Occupation		
Farmer	16	30.8
Agriculture	9	17.3
Teacher	3	5.8
Businessman	9	17.3
Housewife	8	15.4
Services	7	13.5

Jaundice was observed in 12(23.1%) patients, oedema in 14(26.9%) patients, lymph node was found in 10(19.2%) patients, stigma of CLD was found in 10(19.2%) patients. Enlarged liver was found in 17(32.7%) patients, epigastric lump in 1(1.9%) patients and hepatomegaly in 5(9.6%) patients (Table-II).

Table-II: Sign and symptoms of the study subjects (n=52)

Features	Frequency (n)	Percentage
Jaundice	12	23.1
Oedema	14	26.9
Lymph node	10	19.2
Stigma of CLD	10	19.2
Abdomen		
Liver enlarged	17	32.7
Epigastric lump	1	1.9
Hepatomegaly	5	9.6

HBsAg was present in 8(15.4%) patients and Anti HCV in 1(1.9%) patients. (Table-III)

Table-III: Virological etiology of the study subjects (N=52)

Virology	Frequency (n)	Percentage
HBsAg	8	15.4
Anti HCV	1	1.9

Most of the SOL were hepatocellular carcinoma (44.2%) followed by metastatic adenocarcinoma (17.3%), adenocarcinoma (11.5%), malignant cell (9.6%), inflammatory lesion (5.8%), chronic granulomatous inflammation (3.8%), metastatic carcinoma (3.8%), hepatic SOL (1.9%) and CLD (1.9%) (Table-IV).

Table-IV: Spectrum of FNAC findings in Liver SOLs (n=52)

FNAC Report	Frequency (n)	Percentage
Metastatic adenocarcinoma	9	17.3
Inflammatorylesion	3	5.8
Hepatocellular carcinoma	23	44.2
Chronic granulomatous inflammation	2	3.8
Hepatic SOL	1	1.9
Adenocarcinoma	6	11.5
Metastatic carcinoma	2	3.8
Malignant cell	5	9.6
CLD	1	1.9

Discussion:

Mean age of the patients was 54.13 ± 10.57 years with a range of 30 to 85 years and the majority of the patients were between the ages of 41 and 60 in this study in this study. Half of the patients belonged to age 51-70 years and the mean age was found 53.0±15.0 years with range from 18 to 90 years.[10] Similar findings were also observed by Nasit et al.[3] in India and Nazir et al.[4] in Pakistan. Males (82.7%) were predominant than females (17.3%) in this study. Three fourth (75.0%) patients were male and (25.0%) patients were female.[10] Males predominance was also observed in other studies.[11-13] In Asia, males are more likely than females to be exposed to hepatitis due to socioeconomic factors and lifestyle choices. Males are more likely to have risk factors for HBV and Anti HCV in 1(1.9%) patients in this study. HBsAg was positive in 25.0% cases and Anti HCV was positive in 4.1% cases.[10] Hepatocellular carcinoma is the most common primary malignancy of the liver in adults. Liver is one of the most common sites for metastatic disease, accounting for 25% of all metastasis to solid organs.[15] Most of the SOL in this study were hepatocellular carcinoma (44.2%) followed by metastatic adenocarcinoma (17.3%), adenocarcinoma (11.5%), malignant cell (9.6%), inflammatory lesion (5.8%), chronic granulomatous inflammation (3.8%), metastatic carcinoma (3.8%), hepatic SOL (1.9%) and CLD (1.9%). Hepatocellular carcinoma was 29.8% and adenocarcinoma was 35.0% in the study of Rastogi et al.[12] Hepatocellular carcinoma was 20.0%, adenocarcinoma was 62.9% in the study of Dalsaniya et al.[11] In the study of Sultana et al, out of 48 Space Occupying Lesion of Liver the cytological diagnosis revealed the highest number of cases of hepatocellular carcinoma 22(45.8%), followed by metastatic carcinoma 13(27.1%), abscess 6(12.5%), hepatocellular dysplasia 3(6.3%) and negative for malignant cell 4(8.3%).[10] This study result also supported by Sukumaran et al.[16]

Conclusion:

SOL of liver is a common finding in ultrasonogram of the abdomen. Most common SOL of liver was hepatocellular carcinoma and adenocarcinoma.

Conflict of Interests:

The authors declare that there is no conflict of interests regarding the publication of this paper.

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Vitamin D Status and its Associated Risk Factors in Apparently Healthy Bangladeshi Adults

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Abstract

Background:
Though Vitamin D deficiency (VDD) is highly prevalent worldwide, there is very limited data in Bangladesh.

Objective:
The aim of this study was to determine the vitamin D status and its associated risk factors in apparently healthy Bangladeshi adults.

Methods:
This observational cross-sectional study was carried out in 232 apparently healthy adult participants, who visited the hospital as an attendant of the patients from the Department of Endocrinology, Bangabandhu Sheikh Mujib Medical University (BSMMU). All the participants were taken their demographic profile and investigated for vitamin D levels. High-performance liquid chromatography (HPLC) was used to measure Serum 25(OH)D.

Results:
About 30% of healthy individuals had VDD with a cut-off of vitamin D level <12 ng/ml, followed by around 40% who had vitamin D insufficiency and another 30% who had vitamin D sufficiency. People with age ≥60 years had significantly higher vitamin D levels (ng/ml) than people with age 40 – 59 years [21.14±10.19 vs. 15.31±7.40, post hoc Tukey test p=0.015]. Inadequate exposure of body surface area (<20%) to sunlight was significantly associated with higher VDD category [90.1% vs. 9.9%, p=0.027] and lower vitamin D level [15.84±7.67 vs. 19.03±6.98, p=0.014] than individuals with adequate exposure. Inadequate exposure to sunlight was associated with 3.197 (0.073, 9.532) times increased risk of VDD (p=0.037).

Conclusion:
Around one-third apparently healthy Bangladeshi adults had VDD that might be contributed by inadequate exposure of body surface area to sunlight.

Keywords: Vitamin D, Vitamin D deficiency, Risk factor, Bangladeshi adults

Introduction:

Vitamin D has a crucial role in calcium homeostasis and metabolism in the human body and consequently is considered important to maintain bone health.[1] Vitamin D plays an essential role in the modulation of the immune system and the regulation of body cells' differentiation and proliferation. Therefore, vitamin D deficiency (VDD) is believed to be associated with the risk of several serious non-skeletal chronic diseases such as autoimmune diseases, cardiovascular disease, and certain cancers.[2] Almost 90% of the human endogenous vitamin D is synthesized primarily in the skin by activation of 7-dehydrocholesterol triggered by exposure to ultraviolet (UVB) sunlight, so limited exposure to the sunlight might lead to VDD. The remaining 10% is acquired from nutritional sources such as codfish, mushrooms, eggs, and fortified foods including milk. Although vitamin D synthesis depends on UVB sunlight exposure, many other factors such as age, obesity, skin color, dress style, and sunscreen use might affect vitamin D level.[3] Currently, the global prevalence of VDD is an epidemic and considered a public health concern in many regions around the world.[4] In Bangladesh, several recent studies have reported that about 82% to 100% of the studied Bangladeshi populations have low (insufficient or deficient) vitamin D

levels.[5-10] A study conducted within the working population found that 100% of the garments workers and the seemingly healthy population and 94.3% of Bangladeshi adult Muslim females had vitamin D levels lower than normal.[7,8] Despite having abundant exposure to the sun, about 71% of healthy coastal fishermen had low vitamin D.[10] A recent Bangladeshi study also found VDD in about 87.3% of new type 2 diabetes mellitus and 74.5% of healthy control. Several factors could contribute to VDD. Therefore, it is important to determine the risk factors that are associated with VDD in order to establish relevant strategies to prevent and manage this emerging health problem. Few studies have examined the vitamin D status and its associated factors of healthy adults from Bangladesh. Therefore the aim of this study was to assess vitamin D status in healthy Bangladeshi adults and identify the major risk factors which might be associated with VDD by evaluating selected variables related to socio-demographic, lifestyle, and health status characteristics, as well as, dietary intake.

Methods:

This Observational cross-sectional study was conducted in the Department of Endocrinology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. Adult attendants of patients of BSMMU were requested to participate in the study. Participants who were taking or had received vitamin D or calcium supplements within the last 120 days of sample collection, or took medication that affected calcium, vitamin D metabolism, and bone, or who had any known diseases were excluded from the study. The willing participants underwent full clinical assessment, prior to enrollment it was established that all of the participants had normal liver and kidney function. A total of 232 apparently healthy adult attendants of patients of BSMMU were recruited during the period of January 2018 to January 2019. Anthropometric measurements were performed using the same standardized techniques and calibrated digital scale (Seca, Germany), throughout the study. Body mass index (BMI) was calculated, for all subjects wearing light clothing and no shoes, as weight in kilograms (kg) divided by squared height in meters (m). Dietary intake of calcium and vitamin D was collected from 7-day food diaries. Physical activity information was obtained by the International physical activity questionnaire (Short last 7 days self-administered format).[11] Sunlight exposure was evaluated based on sunscreen use and daily average time of sun exposure between 11:00 to 15:00 hour with the sun exposure >20 % body surface.[12] A morning fasting 10 ml venous blood sample was collected from each subject. The sample tubes were covered by aluminum foil paper and complete centrifugation of the blood sample was done in a dark room and serum was separated. Serum was collected in tubes and preserved at – 20^{0}C until assay. Serum sample for 25(OH)D was transported to Centre for Advanced Research in Sciences, Dhaka University. All the samples were analyzed by the same methods throughout the study period, using kits provided by the same manufacturer. 25(OH)D was measured by High-performance liquid chromatography (SIL 20 series prominence HPLC, Shimadzu, Japan). The manufacturer's normal range as re ported in the kit was 20 to 100 ng/ml with an analytical sensitivity of 2.0ng/ml. The coefficient of variability was 2.6 – 4.9%. Data was cross-checked daily at the end of the day to find out errors and inconsistency of data and necessary editing, cleaning, coding, and tabulation was done manually.

Operational definition:

Vitamin D status was categorized by the Institute of Medicine (IOM), 2011 criteria into vitamin D sufficiency (20 ng/ml or 50 nmol/L), insufficiency (12–19.99 ng/ml or 30-50 nmol/L), and the deficiency (<12 ng/ml or 30 nmol/L).[13]

Statistical analysis:

Data were analyzed using a computer-based SPSS program (version 22.0). Analyzed data were described in frequencies (percentages) for qualitative values and mean (SD) for quantitative values. Comparison between groups was done by independent-samples T-test or one-way ANOVA test (with post hoc Tukey test) for quantitative variables and Pearson's chi-square/ Fisher's exact test for qualitative variables. Correlations of vitamin D with clinical variables were done by Pearson's correlation test. Multivariate linear regression analysis was done with vitamin D level as the dependent variable. Multivariate multinomial logistic regression analysis was done to see the predictive associations of sociodemographic and vitamin D-related factors with VDD. A two-sided p <0.05 was set as statistically significant.

Results:

Figure-1 showed the vitamin D status of the study

population according to IOM criteria. Around 30% of healthy individuals had VDD with a cut-off of vitamin D level <12 ng/ml, followed by around 40% who had vitamin D insufficiency (12–19.99 ng/ml) and another 30% had vitamin D sufficiency (20 ng/ml).

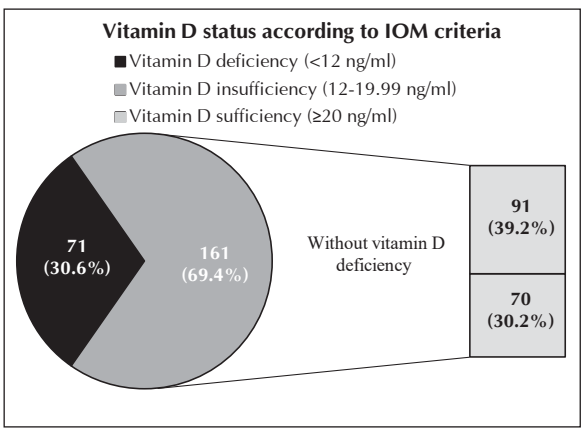


Figure-1: Vitamin D status of the study population according to IOM criteria

Table-II showed vitamin D level and status according to some vitamin D related factors including physical findings. None of them except inadequate exposure of body surface area (<20%) to direct sunlight was significantly associated with higher VDD category [90.1%vs. 9.9%, p=0.027] and lower vitamin D level [15.84±7.67 vs. 19.03±6.98, p=0.014] than individuals with adequate exposure of body surface area to sunlight.

None of the variables were significantly correlated with vitamin D (age: r= 0.080, p= 0.227; BMI: r= 0.001, p= 0.990; WC: r= -0.097, p= 0.139; SBP: r= 0.047, p= 0.476). Similarly, none of the variables had significant predictive associations with vitamin D level (age: β= 0.071, p= 0.297; BMI: β= 0.078, p= 0.338; WC: β= 0.143, p= 0.080; SBP: β = -0.029, p=0.772; DBP: β= 0.087, p= 0.383; constant: B= 17.688, p= 0.002) in linear regression analysis.

Table-I: Associations of vitamin D with demographic characteristics of the study population

Variable	Categories	Number (%)	Vitamin D			*p-value	Vitamin D level (ng/ml)	**p-value
			Deficiency	Insufficiency	Sufficiency			
			71(30.6%)	91(39.2%)	70(30.2%)		mean±SD	
Age group (Years)	<40	141(60.8)	43(60.6)	56(61.5)	42(60.0)		16.47±7.27	
	40-59	75(32.3)	25(35.2)	30(33.0)	20(28.6)	0.519	15.31±7.40	0.021
	≥60	16(6.9)	3(4.2)	5(5.5)	8(11.4)		21.14±10.19	
Sex	Male	111(47.8)	32(45.1)	44(48.4)	35(50.0)	0.842	16.36±7.49	0.917
	Female	121(52.2)	39(54.9)	47(51.6)	35(50.0)		16.47±7.80	
Resident‡	Rural	45(19.4)	10(14.1)	20(22.0)	15(21.4)	0.401	17.60±7.72	0.250
	Urban	187(80.6)	61(85.9)	71(78.0)	55(78.6)		16.13±7.61	
Educational status	Not completed primary	36(15.5)	9(12.7)	15(16.5)	12(17.1)		18.11±8.06	
	Not completed secondary	79(34.1)	20(28.2)	33(36.3)	26(37.1)	0.53	17.19±7.65	0.106
	Not completed graduation	43(18.5)	19(26.8)	14(15.4)	10(14.3)		14.30±7.44	
	Completed graduation	74(31.9)	23(32.4)	29(31.9)	22(31.4)		16.00±7.36	
Socio-economic status¶	High	28(12.1)	8(11.3)	12(13.2)	8(11.4)		16.26±5.52	
	Middle	123(53.0)	37(52.1)	49(53.8)	37(52.9)	0.988	16.51±7.76	0.975
	Low	81(34.9)	26(36.6)	30(33.0)	25(35.7)		16.29±7.86	
Smoking status†	Nonsmoker	174(75.0)	52(73.2)	68(74.7)	54(77.1)	0.876	16.48±8.26	0.835
	Smoker (current/past)	58(25.0)	19(26.8)	23(25.3)	16(22.9)		16.23±8.26	
Physical activity level	High	69(29.7)	17(23.9)	33(36.3)	19(27.1)		17.17±7.82	
	Medium	128(55.2)	45(63.4)	49(53.8)	34(48.6)	0.059	15.48±7.34	0.088
	Low	35(15.1)	9(12.7)	9(9.9)	17(24.3)		18.36±8.01	

* Pearson's chi-square/Fisher's exact test was done as appropriate;
** Independent samples-T test/one way ANOVA (with post hoc Tukey) test was done as appropriate.
‡ Bangladesh national conservation strategy, 2013[14]
¶ Socio-economic status by monthly income[7]
† Mayo clinic smoking status category[15]

Table-II. Associations of vitamin D with vitamin D related factors and physical findings

Variable	Categories	Number (%)	Vitamin D			*p-value	Vitamin D, ng/ml (mean±SD)	**p-value
			Deficiency	Insufficiency	Sufficiency			
Sunlight exposure time	Adequate	103(44.4)	30(42.3)	40(44.0)	33(47.1)	0.853	17.02±7.85	0.284
	Inadequate	129(55.6)	41(57.7)	51(56.0)	37(52.9)		15.94±7.46	
Body surface area exposed to sunlight	Adequate	42(18.1)	7(9.9)	16(17.6)	19(27.1)	0.027	19.03±6.98	0.014
	Inadequate	190(81.9)	64(90.1)	75(82.4)	51(72.9)		15.84±7.67	
Use of sunscreen lotion (SPF >8)¶	Yes	16(6.9)	8(11.3)	4(4.4)	4(5.7)	0.266	13.93±6.84	0.178
	No	216(93.1)	63(88.7)	87(95.6)	66(94.3)		16.60±7.67	
Consumption of vitamin D containing food¥	Yes	189(81.5)	61(85.9)	70(76.9)	58(82.9)	0.330	16.32±7.97	0.704
	No	43(18.5)	10(14.1)	21(23.1)	12(17.1)		16.82±6.00	
Body mass index, Kg/m^2 ǂ	Obese (≥27.5)	39(16.8)	12(16.9)	16(17.6)	11(15.7)	0.920	16.08±6.74	0.933
	Overweight (23–27.4)	117 (50.4)	34(47.9)	48(52.7)	35(50.0)		16.74±7.50	
	Optimal (18.5 – 23)	70(30.2)	23(32.4)	26(28.6)	21(30.0)		16.52±6.38	
	Underweight (<18.5)	6(2.6)	2(2.8)	1(1.1)	3(4.3)		16.06±8.51	
Waist circumference, cm	Centrally nonobese	130(56.0)	43(60.6)	51(56.0)	36(51.4)	0.560	15.88±7.32	0.225
	Centrallyobese (M≥90, F≥80)	102(44.0)	28(39.4)	40(44.0)	34(48.6)		17.10±8.00	
Blood pressure, mm-Hg	Normotensive	42(18.1)	12(16.9)	16(17.6)	14(20.0)	0.909	17.74±7.24	0.214
	Hypertensive (≥140/90)	190(81.9)	59(83.1)	75(82.4)	56(80.0)		16.12±7.71	

*Pearson's chi-square/Fisher's exact test was done appropriately;
**Independent samples T-test/one way ANOVA test was done as appropriate
¶ SPF (sun protecting factor)[16]
¥Sunlight exposure of >20% of body surface area (face, arms, hands & legs)
ǂ At least 1 serving of egg yolk or large fish per day, at least 4 days a week (Micka)[17]
ǂ BMI classification for Asian[18]

Multinomial multivariate logistic regression analysis showed that inadequate exposure to sunlight was associated 3.197 times increased risk of VDD. None of the other variables had a significant predictive association with VDD [Table-III].

Table-III: Multivariate multinomial logistic regression of vitamin D deficiency (<12 ng/ml) as the dependent variable

Variable	Categories	OR (95%CI)	p-value
Age group (Years)	<40	1	
	40-59	1.100(0.529, 2.286)	0.818
	60	0.683(0.134, 3.490)	0.406
Sex	Male	1	
	Female	0.864(0.336, 2.221)	0.803
Resident	Rural	1	
	Urban	2.396(0.884, 6.496)	0.165
Educational status	Not completed primary	1	
	Not completed secondary	0.443(0.099, 1.990)	0.261
	Not completed graduation	0.497(0.158 1.560)	0.492
	Completed graduation	1.609(0.581, 4.458)	0.675
Socio-economic status	High	1	
	Middle	1.854(0.451, 7.621)	0.523
	Low	3.661(0.708, 18.931)	0.195
Physical activity level	High	1	
	Medium	1.541(0.729, 3.259)	0.181
	Low	0.759(0.199, 2.894)	0.933
Smoking status	Nonsmoker	1	
	Smoker	0.946(0.399, 2.241)	0.918
Sunlight exposure time	Adequate	1	
	Inadequate	1.418(0.666, 3.021)	0.365
Body surface are exposed to sunlight	Adequate	1	
	Inadequate	3.197(0.073, 9.532)	0.037
Use of sunscreen lotion	No	1	
	Yes	2.254(0.669, 7.596)	0.190
Consumption of vitamin D containing food	No	1	
	Yes	0.566(0.249, 1.289)	0.175
BMI	Optimal	1	
	Underw eight	2.086(0.295, 14.768)	0.462
	Overweight	0.878(0.415, 1.859)	0.735
	Obese	0.922(0.323, 2.630)	0.880
Waist circumference	Nonobese	1	
	Centrally obese	1.244(0.574, 2.697)	0.579
Blood pressure	Normotensive	1	
	Hypertensive	0.977(0.430, 2.222)	0.957
Intercept		B= -2.203	0.015

OR= odds ratio; CI= confidence interval; B= unstandardized regression co-efficient

Discussion:

The present study found that higher proportion of vitamin D insufficiency (40%) and relatively low VDD (30%) in healthy Bangladeshi adults according to IOM criteria. People with older age (60 years) had significantly higher vitamin D levels than people with age group 40 – 59 years. Only inadequate exposure of body surface area to

sunlight was significantly associated with higher VDD category and lower vitamin D than individuals with adequate exposure of body surface area to sunlight. None of the other variables (gender, locality, income level, physical activity, sun exposure, dietary history, obesity) had any associations with either vitamin D status or level. In this study, we found that VDD was relatively low in healthy Bangladeshi adults. Similar results greatly influences vitamin D status. Almost all previous research works in our country have found a higher frequency of VDD than our finding.[5-10] Also, a high prevalence of VDD has been reported among healthy adults from tropical and subtropical regions in India and other South Asian countries, where there is equally sufficient sunshine compared to our study[21-23]. An overall pooled estimate of results from many European countries, irrespective of age group, ethnic mix, and latitude of study populations, showed a VDD of 40.4% which is far much higher than that observed in our study.[24] All of these observations may probably reflect the impact of lifestyle and environmental factors on vitamin D status. The use of different cut-off values (<12 ng/ml) to define VDD might be an important cause of this different result.The highest percentage of deficient vitamin D levels was found in 40 – 59 years of age group than age 60 years in our study. The result is somewhat unexpected since an inverse association between 25OHD and age has been shown in several previous large population-based studies.[19,25,26] Our active working-age groups are suffering from low vitamin D levels possibly due to lifestyle and behavioral changes across generations, such as a tendency to work indoors and avoidance of sunlight exposure in the younger generation as compared to prior generations. The use of multivitamins and vitamin D supplementation has increased in our older adults than a young adult that might play another role. However, there were also studies showing that the younger age group had a lower serum 25(OH)D level compared to older subjects.[7,20] Sunlight exposure plays a vital role in VDD and only 1 – 2 hours/day of sun exposure is sufficient for normal vitamin D3 level.[8] Our study revealed that vitamin D status was not influenced by sunlight exposure but inadequate exposure of body surface area of skin to sunlight correlated with VDD. Similar findings were found in a study in which those who covered their body less (<60%) had more VDD.[20] It could be probably due to the climatic and cultural conditions that warrant more body covering for those who spent more time outdoors than when indoors. Most of the participants did not own cars, thus they eventually at some point of the day had to walk out, either to take a cab or walk home, leading to some degree of outdoor sun exposure. Association of VDD and inadequate exposure of body surface area of skin to sunlight may indicate not only sunlight exposure, but the exposure of body surface area is an important factor for vitamin D status in our population. Contrarily, a study in the United Arab Emirates reported low vitamin D levels with increased Sun Avoidance Inventory score (which includes outdoor activities and dressing style), highlighting the effect of exposure to sun on vitamin D.[27] This study revealed no significant difference in vitamin D status between females and males which is in conformity with the results of a systematic review of vitamin D status in populations worldwide which did not reveal any substantial gender-related differences in vitamin D status. Contrarily, another study found that females had significantly higher vitamin D levels than males. The locality of urbanization may not have had any effect on vitamin D in this study; which is contrary to another two Bangladeshi studies.[7,8] There was no significant difference in vitamin D status with other indicators of socioeconomic status such as level of education, income level, and marital status. This is similar to another study but contrary to the results of another Bangladeshi study which revealed that lower levels of vitamin D were more associated with higher socioeconomic status.[7,8]

There is some evidence that vitamin D is accumulated in adipose tissue with decreased bioavailability and lower serum levels in persons with higher BMI.[28] The lack of any consistent relationship between BMI and vitamin D in our study, similar findings found in another study.[19] The observations of other studies found a significant and negative relationship was found between serum 25(OH)D and BMI.[7,8] As the current study was cross-sectional, it was impossible to determine the causal relationship between obesity as

indicated by BMI and serum 25(OH)D in the study participants. In this study, we did not find any association between the frequency of intake of selected vitamin D-rich foods and vitamin D status. This was similar to the finding of a study among garment factory workers in Bangladesh.[6] It is important to recognize that a diet containing natural vitamin D provides only about 10 percent of the body's vitamin D requirements and is considered a poor predictor of vitamin D status.[3,29] The strength of our study is that we have limitations of this study include relatively small size, failure to study all subjects in both summer and winter. Furthermore, parathormone levels were not available in our study participants.

Conclusion:

Around one-third of the healthy Bangladeshi population had VDD. Besides, around 40% had vitamin D insufficiency. All the potential risk factors, only inadequate skin exposure to sunlight had a significant association with VDD. Increasing outdoor activities along with adequate time and exposure of body surface area to sunlight may prevent VDD in our population.

Acknowledgments:

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Original Article

Functional Outcome of Proximal Femoral Locking Compression Plate (PF-LCP) for the Treatment of Comminuted Subtrochanteric Femoral Fractures by Minimum Invasive Plate Osteosynthesis Technique

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Abstract

Background:
The incidence of proximal femoral fractures has increased significantly in recent years, and is expected to continue to rise with increasing life expectancy. Comminuted subtrochanteric fractures are difficult fractures associated with high incidence of complications. Traditional extramedullary implants are associated with higher rate of implant failure while intramedullary nails are technically demanding.

Objective:
This study was done to evaluate the functional outcome of proximal femoral locking compression plate for the treatment of comminuted subtrochanteric femoral fractures by MIPO technique.

Methods:
This descriptive observational study was conducted over a period of two year at Rangpur Medical College Hospital, Rangpur. There were 25 men and 5 women with a mean age of 41.35 years. Seinsheimer types III–V fractures were included in this study. Majority of cases belonged to Seinsheimer type IIIA (40.0%).

Results:
Harris Hip Score was used for clinical assessment, 22 patients had excellent outcome (73.3%), 5 patients had good (16.7%), with 3 fair (10%) and no poor result. So, satisfactory outcome was 91.50%.

Conclusion:
Fixation of comminuted subtrochanteric femoral fractures with PF-LCP by MIPO technique provided stable fixation with high union rate and fewer complications.

Keywords: Comminuted subtrochanteric fracture, Proximal femoral locking compression plate, Minimum invasive plate osteosynthesis

Introduction:

During the last decade, techniques for internal fixation shifted from direct reduction and rigid fixation to biologic internal fixation using indirect reduction techniques. Biologic internal fixation is characterized by the preservation of bone and soft tissue vascularity and relative rather than absolute mechanical stability.[1] The incidence of proximal femoral fractures has increased significantly in recent years, and is expected to continue to rise with increasing life expectancy. Projection studies estimate that in 2050 approximately 6.3 million people will sustained this type of fracture. Despite this frequency, the optimal method of management of these fractures remains a matter of debate. A number of issues concerning the best treatment options for each proximal femoral fracture type and optimal aftercare are still to be answered.[2]

These fractures account for 10% to 34% of all hip fractures. They have a bimodal age distribution and different mechanism of injury. Older patients typically sustain low-velocity trauma, where as in younger patients these fractures commonly result from high-energy trauma and often are associated with other fractures and injuries.[3] The management of these fractures is challenging for two reasons: (1) the inherent instability of the fracture pattern and (2) the forces of the muscles acting on the proximal and distal fragments. Often the medial calcar is comminuted, giving the fracture a tendency to collapse into varus. The powerful abductor and iliopsoas muscles insert on the proximal fragment and force it into abduction, flexion, and external rotation. This makes closed reduction of this fracture difficult and pushes the proximal fragment into a mal reduced position.[4] Although closed intramedullary nailing techniques have been successful in treating subtrochanteric femur fractures and have allowed for nail insertion via a small access incision, there are some disadvantages of this technique. Significant insertion site morbidity has been reported including trochanteric pain, abductor weakness, and heterotrophic bone formation.Furthermore, intramedullary fixation transiently ablates the endosteal blood supply is technically demanding with proximal fracture extension involving the nail insertion site, can lead to iatrogenic fracture or propagation of the fracture, and has a concerning risk of varus malunion, if not correctly addressed intraoperatively.[5] All intramedullary nails are thicker in their proximal end, and the greater trochanter insertion point must be reamed to 17 mm of diameter for the PFNA. The diameter of the PFNA helical blade is 11 mm. Therefore, reaming the medullary cavity and drilling a large hole in the lateral cortex in an unstable proximal femoral fracture with comminution of the greater trochanter and/or lateral cortex might cause the fracture to become even more unstable.[6] Over the last few years, there has been a shift in the principles of management of these fractures from rigid anatomic reduction to relative biological fixation which preserves the vascularity of bone fragments and enhances their callus-forming abilities. Screws are locked to the plate. So stability is maintaining at angular-stable screw plate interface & it is difficult for one screw to pull out or fail unless all adjacent screws fail.Biological fixation, in comparison to traditional open plating, has produced good results for these fractures.[7] Biological plating is the concept that is particularly useful in comminuted metaphyseal fractures that cannot be nailed. This technique described by Leunig M et al. uses “indirect reduction”, which minimizes direct exposure and muscle stripping, reducing the fracture by distraction using either a distractor, tension device, or lamina spreader. In 1997, Wenda and Krettek introduced a percutaneous plating technique called “minimally invasive plate osteosynthesis (MIPO)””. MIPO has gained popularity and has continued to evolve in the last decade.[8] Thus, the MIPO technique allows biological fracture healing by preserving the vascularity of all bone fragments, thus serving as a living bone graft. Therefore, primary bone graft is not necessary in severely comminuted fracture. So this is an important alternative to the standard methods of internal or external fixation in this fracture.[9]

Methods:

Between January 2018 to December 2019, 30 patients with clinical and radiological evidence of comminuted subtrochanteric fracture was admitted in Rangpur Medical college Hospital, Rangpur, were selected for this study.Cases were selected for study from emergency or OPD after x-ray examination, then admitted to hospital. After counselling for surgical technique then taking consent for thesis enrolment, preoperative data were collected. After discussing the technique with the surgical team, operations done methodically, per operative and postoperative data were recorded. Each patient was followed up for at least 24 weeks, clinical, radiological and functional scoring done and recorded for final outcome evaluation.

Proximal Femoral Locking Compression Plate:

The LCP Proximal Femoral Plate is a limited-contact stainless steel plate. The proximal portion of the plate is precontoured for the proximal femur. The two proximal screw holes are designed for 7.3 mm cannulated cancellous locking head screws and third locking hole is designed for 5.0 mm cannulated cortical locking screws (Figure-1 & 2). The remaining screw holes in the plate shaft are combi-holes.[9]

Biomechanically, the locked plate system is designed to convert the shear forces experienced at the implant with the application of load into compressive forces at the screw bone interface. This force conversion is beneficial in fracture

fixation because cortical bone is stronger against compressive loads than shear loads. Additionally, the angular stability of locked screws allows the applied load to be more evenly distributed amongst the component screws, avoiding significant load concentration at a single screw-bone interface. This leads to the overall fixation strength of the locked plate system, equaling the sum of fixation strengths of all screw-bone interfaces instead of that of a single component screw as in conventional plating[11].





Figure-1&2: Position of proximal and distal screws in A/P view.

Surgical Technique:
Surgery was performed with the patient supine on a fracture table. Length restoration and fracture reduction was done by indirect method. In cases where a closed reduction is successful and less-invasive plating technique feasible, the plate is slid distally in the submuscular plane by the use of a distal counter incision at the level of the tip of the plate. The most distal hole of the plate can be used to attach a suture that is pulled through the distal counter incision to facilitate the correct distal alignment of the plate to the bone, which must be visualized under C-arm. The plate can be held to the shaft by percutaneous K-wire. The plate was then distally fixed with at least 3 bicortical locking head screws. After proper haemostasis a drain was placed at appropriate site and wound was closed in layers with vicryl (Figure-3). The skin was closed with skin stapler.



Figure-3: Wound closure with drain tube

Postoperative period and follow-up: The drain was removed after 48 h. Patients were mobilised on the second postoperative day allowing only toe touch weight bearing. Partial weight bearing was allowed at 4 weeks and was gradually increased as tolerated. Patients were followed up at 4th weeks, 12th weeks, 24th weeks and evaluated with the Harris Hip Score.

Results:
Table-I showed the socio-demographic features of the patients. The youngest patient in our study was 18 years old and the oldest was 70 years. Majority were in 31-40 years and the mean age was 44.3 ±16.5 years. Like all trauma cases comminuted subtrochanteric fracture is more common in male (83.3%) due to more activities and traveling. The main occupation was service holder (40.0%) followed by business (16.7%), housewife (16.7%), student (16.7%) and farmer (10.0%).

Table-I: Socio-demographic characteristics of the participants (n=30)

Variable	Frequency	Percentage
Age group (Years)		
18-20	3	10
21-30	3	10
31-40	8	27
41-50	5	17
51-60	4	13
61-70	7	23
Mean ± SD	44.3 ±16.5	
Sex		
Male	25	83.3
Female	5	16.7
Occupation		
Service holder	12	(40.0%)
Business	5	(16.7%)
Housewife	5	(16.7%)
Student	5	(16.7%)
Farmer	3	(10.0%)

Out of 30 cases, 23 (76.7%) cases of injury were due to RTA followed by fall from height (13.3%) and fall on slippery ground (10.0%). Right and left limb was affected in 60.0% and 40.0% cases respectively. A majority of cases belonged to Seinsheimer type IIIA (40.0%) followed by type IIIB (30.0%), type IV (23.3%) and type V (6.7%). (Table-II)

Table-II: Distribution of patients according to etiology, site and classification of injury (n=30)

Variable	Frequency	Percentage
Cause of injury		
RTA	23	76.7
Fall on slippery ground	3	10.0
Fall from height	4	13.3
Affected side		
Right	18	60.0
Left	12	40.0
Seinsheimer's classification		
Seinsheimer's type IIIA	12	40.0
Seinsheimer's type IIIB	9	30.0
Seinsheimer's type IV	7	23.3
Seinsheimer's type V	2	6.7

Majority of the patients were operated within ten days of trauma. Average time interval between injury to surgery was 9.70±3.27 days, mean operative duration was 80.8±15.8 minutes, intra operative average blood loss about 302.8±60.1 ml. Eleven patient need per-operative blood transfusion and two patients need post operative blood transfusion. Intra-operative problems encountered with proximal screw insertion (36.7%), followed by plate position (20%). The precontoured nature of the PF-LCP avoids varus mal-reduction. The perfect fit of the implant to the proximal part of the femur with its tip flush with the tip of greater trochanter allows restoration of normal neck shaft angle relationship. We did not encounter any case of varus malalignment. In three patients 1 to 1.5 centimeter shortening was seen. No patient had significant rotational malalignment as determine by clinical examination. There were no cut-outs or pull-out of screws but only one had breakage of proximal screw. There were no re-operations, in any of the patients during the study. Mean duration of hospital stay 13.7±2.4 days (Table-III).

Table-III: Distribution of patients related to different parameters of operation (n=30)

Parameter	Frequency	Percentage
Time interval (Day)		
0-5	1	3.3
6-10	19	63.4
11-14	10	33.3
Mean± SD	9.7± 3.27	
Per-operative blood loss (ml)		
150- 200	1	3.3
201-250	5	16.7
251-300	13	43.3
301-350	5	16.7
351-400	4	13.3
401-450	2	6.7
Mean ± SD	302.8 ± 60.1	
Per- operative technical problem		
Reduction problem (malalignment)	5	16.7
Proximal screw insertion	11	36.7
Plate position difficulty	6	20.0
Broken hard wire(guide wire)	2	6.6
Operative procedure duration (mins)		
00- 60	7	23.3
61- 90	18	60.0
91-120	5	16.7
Mean ± SD	80.8 ± 15.8	
Postoperative complication		
Infection	1	3.3
Proximal screw breakage	1	3.3
Screw cutout	0	0.0
Implant failure	0	0.0
Post operative BT	2	07
Further operation	0	0.0
Limb shortening 1-2cm	3	10
Hospital stay (Days)		
5-10	2	6.7
11-15	22	73.3
16-20	6	20.0
Mean ± SD	13.7 ± 2.4	

Table-IV showed, 93.3% of fractures united within 24 weeks. Average fracture union time was 17.1 ±4.1 weeks. Harris Hip Score was used for final clinical assessment.[11] 73.3% of patients had Harris Hip Score 90-100, 16.7% had 80-89 and 10.0% had 70-79. Mean Harris Hip Score was 91.50 ± 7.79. So, satisfactory outcome was 91.50%.

Table-IV: Distribution of patients related to different parameters of treatment and functional outcome (n=30)

Treatment outcome	Frequency	Percentage
Status of fracture union at 24 weeks		
United	28	93.3
Un-united	2	6.7
Bony union time and rate		
12 – 18 weeks	25	83.3
19 – 24 weeks	3	10.0
25 – 30 weeks	2	6.7
Mean ± SD (weeks)	17.1 ± 4.1	
Functional outcome according to modified Harris Hip Score		
Harris Hip Score	Mean ± SD	
Pain	41.53 ± 4.29	
Limp	7.90 ± 1.67	
Support	11.00 ± 0.00	
Distance walk	9.10 ± 2.16	
Stairs	2.73 ± 1.11	
Socks/Shoes	4.00 ± 0.00	
Sitting	5.00 ± 0.00	
Public transport	1.00 ± 0.00	
Absence of Deformity	4.00 ± 0.00	
Range of motion scale	5.00 ± 0.00	
Total	91.50 ± 7.79	
Harris Hip Score (Functional outcome)	Frequency	Percentage
90-100 (Excellent)	22	73.3
80-89 (Good)	5	16.7
70-79 (Fair)	3	10.0
<70 (Poor)	0	0.0
Total	30	100

Discussion:

In this study as per Harris Hip Score 22 patients had excellent (73.3%), good 5 patients (16.7%), with 3 patients fair (10%) and no poor result (00%), which was similar to the outcome of the study of Siani et al, (2013) excellent (53.1%), good (40.6%), fair (6.25%), study of Celebi. L et al. 2006, excellent (69.9%), good (30.3%), study of Desouky et al. excellent (57%), good (33%), study of Kayali et al. excellent (80%), good (10%), poor (10%).[7,12] The treatment of the comminuted subtrochanteric fractures remains a challenge. The characteristic anatomy, the biomechanical stress and force acting at the subtrochanteric region make it difficult to manage.[13] The gama nail has a failure rate ranging from 12.7% to 15% in various study.[14] As for proximal femoral nail, Fogagnolo et al, found that the intra–operative technical or mechanical complication rate is as high as 23.4%.[15] Uzun et al. reported non union (5.7%), secondary varus displacement (25.7%), cut-out of the proximal screws (5.7%), reverse z- effect (14.3%), reoperation rate (14.3%).[16] Moreover intra- operative problems has also been reported for PFNA at a rate of 20%, femoral shaft fracture at a rate of 9.1% observed by Yaozeng et al.[17] Zha et al. found that the treatment of the subtrochanteric fractures with the PFLP could lower the rate of complications compared with the other treatment modalities. The overall complication rate for PFLP treatment was only 2.7%. Breakage of the implant as low as 1%, reoperation rate 1.9%. PFLP is more suitable for the anatomy of the proximal femur. Its locking screws could firmly joint the plate and proximal and parts of the femur as a whole. Compare to DHS and DCS, the pull-out strength of the locking screws is much higher than this of common screws, which reduces the incidence of screw migration and loosening. Moreover, the PFLP allows for use of multiple screws and the placement of this locking plate also does not require a large hole for the lag diameter screw, which reduces the amount of stress on the calcar aspect of a proximal femur fracture at the time of fixation.[18] Kinast, who compared the treatment options for subtrochanteric fractures with direct and in directed reduction, utilized condylar plate for both groups. In the direct reduction group 16.6% non union and 20.8% infection problems but fewer complications and better healing time was reported in the indirect reduction cases.[19] Comminuted subtrochanteric femoral fractures are considered as one of the most difficult fracture to treat for the Orthopaedic surgeons. It was found that indirect reduction and biological fixation

method with the dynamic condylar screw and plate is considered as a valuable cheap fixation method for the management of comminuted subtrochanteric fractures of femur especially in the young patient's populations.[20] No single treatment option has generally been accepted as the method of choice. There were high rates of delayed union, malunion, and implant failure. Classification of these fractures based on therapeutic criteria has undergone modifications through the years.[21] The precontoured nature of the PF-LCP avoids varus mal-reduction. The perfect fit of the implant to the proximal part of the femur with its tip flush with the tip of greater trochanter allows restoration of normal neck shaft angle relationship. We did not encounter any case of varus malalignment.Celebi et al. (2006) reported a 100% union rate with indirect reduction and plate fixation. They needed full-length incision in some of their cases but did not dissect the fracture site. The PF-LCP does not require reversal, can be slide easily through the sub muscular plane and provides stronger fixation through the three proximal screws. Further, the PF-LCP preserves more bone stock after implantation compared with the use of large proximal lag screws in the DCS or the blade portion of condylar blade plates.[22] Biomechanical analysis has shown the PF-LCP to be superior to the DCS, equivalent to an angled blade plate in terms of strength of the construct.[23]

Conclusion:

Our present study concludes, with proper patient selection, good instrumentation, image intensifier and surgical technique, proximal femoral locking compression plate is the implant of choice in the management of comminuted subtrochanteric fracture by MIPO technique. MIPO technique lessen the operative duration, the amount of blood loss, perioperative complication, has small skin incision, preserves the fracture biology and vascular supply of comminuted fragments, so it helps in rapid bone healing and early rehabilitation. Though the cases in the present study though were mostly young, but also a good number of cases (23%) above the age of 60 years, which also may have good results. So the proximal femoral locking plate is a good alternative and effective for the treatment of comminuted subtrochanteric femoral fractures by MIPO technique even in older age with osteoporotic bone.

Conflicts of Interest:

The authors have no conflicts of interest to declare.

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Original Article

Pattern of Diagnosis of Upper Gastrointestinal Tract Endoscopy-Experience in a Private Centre

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Abstract

Background:
Upper gastrointestinal endoscopy (UGIE), is a valuable tool in the diagnosis and management of diseases affecting the esophagus, stomach, and upper part of the duodenum. The advantage of direct visual inspection is obvious and establishing causes of UGI diseases leads to more efficient treatment and consequently decreases morbidity and mortality. There are many reports in the literature on the indications and findings of UGIE mainly from the tertiary level teaching hospital. However, scanty data are available from a single private center.

Objective:
This study aims to determine the current pattern of endoscopic findings of patients undergoing UGIE at a private center in Rangpur city.

Methods:
This was a cross-sectional study of patients undergoing UGIE at Metrolab imaging and diagnostic centre, a private center of Rangpur city from 1st April 2019 to 30th October 2021. In Bangladesh UGIE service is offered in all tertiary level hospitals and private centers especially divisional or large cities. Most of the endoscopic procedures are performed by gastroenterologists and hepatologists in our country but a few surgeons are performing endoscopic procedures with ERCP.

Results:
The total number of patients was 1515. The majority of the patients (25%) were in the age group of 50-59 years. 46% of patients were endoscopically normal. Non-erosive gastritis was the most frequent endoscopic finding (23%), followed by erosive gastritis (19%). The prevalence of gastric carcinoma was comparatively low (4%).

Conclusion:
This study provides an evidence-based platform for health advocacy in regard of disease diagnosis. The accurate diagnosis would facilitate prompt and accurate treatment as well as reduce morbidity period and mortality.

Keywords: Upper gastrointestinal endoscopy (UGIE), gastritis, peptic ulcer disease (PUD), malignancy

Introduction:

Upper gastrointestinal endoscopy (UGIE), is a valuable tool in the diagnosis and management of diseases affecting the esophagus, stomach, and upper part of the duodenum.[1] It is considered the investigation of choice in cases of dyspepsia, reflux symptoms, patients associated with alarm features like dysphasia, persistent vomiting, haematemesis/melaena, anemia, and weight loss.[2,3] The advantage of direct visual inspection of the esophagus, gastric and duodenal mucosa is obvious. Biopsy specimens can be taken for histological and microbiological examination.[4] UGIE has been found to be both effective and relatively safe procedure that can be performed at large medical centers, small rural hospitals, outpatient clinics or even private offices.[5] Establishing causes of UGI diseases leads to more efficient treatment and consequently decreases morbidity and mortality rates.

There are many reports in the literature on the indications and findings of UGIE mainly from the tertiary level teaching hospital. However, scanty data are available from a single private center. This study aims to determine the current pattern of endoscopic findings of patients undergoing UGIE at a private center in Rangpur city.

Methods:

This was a cross-sectional study of patients undergoing UGIE at Metrolab imaging and diagnostic centre, a private center of Rangpur city. Each patient was clinically evaluated and investigated before the procedure. All patients were given explanatory statements of the procedure and consented prior to endoscopy. And ethical clearance was also taken from Principal, Rangpur Medical College prior to conduct the study. Demographic data eg. age, sex and occupation of the patients were taken. UGEI was performed using the Olympus CV-260 video scope. Study participants were given 10% lidocaine (xylocaine) throat spray with 2% lidocaine jelly at the tip of the scope. The areas examined were the esophagus, stomach, and upper parts of the duodenum. Mucosal biopsies were performed when necessary. Endoscopic findings of each participant were recorded.

Results:

A total of 1515 patients underwent UGIE from the 1st April 2019 to 30th October 2021. The patients consisted of 712(47%) males and 813(53%) females and the mean age was 46 Years (±standard deviation of 15.132) while patients age ranged from children to old age , those in the sixth decade of life constituted the largest cohort (25%), followed by those in the fifth and seventh decades of life (17% and 18% respectively)(Table-I).

Table-I: Age distribution of patients that presented for Upper Gastro-intestinal Endoscopy

Age (Years)	Frequency (n=1515)	Percentage
10-19	30	1.9
20-29	240	15.9
30-39	255	16.9
40-49	255	16.9
50-59	375	24.7
60-69	270	17.8
70-79	90	5.9
Total	1515	100

Table-II: Pattern of diagnosis among patients with upper gastro-intestinal condition

Diagnosis	Frequency (n=1515)	Percentage
Normal	697	46
Non-erosive gastritis	349	23
Erosive gastritis	287	19
PUD	15	1
GOO due to malignancy	60	4
GOO due to healed DU	45	3
Gastric malignancy without obstruction	9	0.6
Polyp (stomach and duodenum)	8	0.5
Oesophageal malignancy	10	0.7
Oesophagitis	22	1.5
Portal hypertensive gastropathy	11	0.7
Others	2	

As Table-2 showed, about half 697(46%) of the patient was normal followed by non-erosive gastritis 349 (23%) and erosive gastritis 287(19%). The total Case of GOO was around one-fourteenth (7%). Among which GOO due to malignancy constituted 60(4%) and GOO due to benign cause appears 45(3%). The least number of cases for pathology in the stomach is due to PUD 15(1%). Other than these a fraction of cases was recorded for both polyp (stomach and duodenum) 8(0.5%) and esophageal growth 10(0.7%).

Discussion:

This study was aimed to document the demographic characteristics, indications, and endoscopic findings of patients undergoing UGIE at a tertiary level private center. Based on the clinical epidemiological approach of criterion-referenced validity, we sought to determine the usefulness and limitations of the clinical approach (only) in the diagnosis of various upper gastro-intestinal conditions by comparing clinic-based diagnosis with endoscopy. Criterion-referenced validity has been considered as "the best and most obvious way of appraising validity".[6] Our findings with regard to non-erosive gastritis as the most common UGI condition and the difference in the age distribution of early and late gastric cancers are in line with current knowledge.[1,7-9] The finding was that 697 patients (46%) were endoscopically normal, these patients may have been suffering from functional dyspepsia or non-ulcer dyspepsia.[10,11]

Non-erosive gastritis was the most frequent endoscopic finding (23%), followed by erosive gastritis (19%). The prevalence of gastric carcinoma (4%) was comparatively low than previous study.[11] In the case of PUD, the rate of diagnosis was 1%, the generally low level of sensitivity and the positive predictive value obtained in this study highlights the poor association between clinical and endoscopic diagnosis. Clinical diagnoses are generally non-specific in nature. This is not unexpected as it may be clinically difficult to distinguish precisely between several conditions, for example, acute gastric ulcer, gastritis, gastro-duodenitis, or even ulcerated gastric cancers.[12]

Conclusion:

Advance technological procedures in disease diagnosis and its management has come at a time when the ability of the Bangladesh health care system to provide expensive services to all patients is increasingly constrained. The use of endoscopy for Upper GI conditions would increase the accuracy of diagnosis, facilitate prompt and accurate treatment as well as reduce morbidity period and mortality. It is important to also note that the availability of UGIE would result in cost-effectiveness in the case of management as the incidence of failed treatment resulting from an "empirical" non-evidence-based approach would be reduced.

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Original Article

Outcome of Tamsulosin and Tamsulosin Plus Tadalafil as Medical Expulsive Therapy for Lower Ureteric Stones: A Quasi-experimental Study

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Abstract

Background:
Each year throughout the world, people seek more than a million visits to healthcare providers and emergency rooms for urinary stone problems. The goal of the treatment of ureteral calculi is to achieve complete stone clearance with minimal morbidity. This research was studied to evaluate the safety and efficacy of tamsulosin alone and its combination with tadalafil therapies for the treatment of lower ureteral stones.

Objectives:
To compare the efficacy of tamsulosin versus tamsulosin plus tadalafil as medical expulsive therapy for lower ureteric stones.

Methods:
Between May 2015 and April 2016, 152 patients presenting with lower ureteric stones (size 5-8 mm) in the Urology outpatient department of Sir Salimullah Medical College Hospital (SSMCH), Dhaka were randomized equally to group A (tamsulosin) or group B (tamsulosin plus tadalafil). Therapy was given for a maximum of 4 weeks. Stone expulsion rate, time to stone expulsion, analgesic use number of a hospital visit for pain episodes, endoscopic treatment, and adverse effects of drugs were recorded. Statistical analyses were carried out using Student's **t**-test and the Pearson's Chi-square test.

Results:
There was a statistically significant higher expulsion rate in group B compared to group A (82.9% vs 65.7% P-value = 0.01) and shorter expulsion time (11.2±6.2 days vs 8.5±4.2 days **p**-value = 0.03). Statistically significant differences were noted in the analgesic requirement, the number of hospital visits, and endoscopic treatment in favor of group B. There was no serious adverse event.

Conclusion:
Medical expulsive therapy for lower ureteric stones using tamsulosin plus tadalafil is safe, effective, and well-tolerated.

Keywords: Outcome, Tamsulosin, Tadalafil, Lower Ureteric Stone

Introduction:

Urolithiasis is one of the most common disorders of the urinary tract. Each year throughout the world, people seek more than a million visits to healthcare providers and emergency rooms for urinary stone problems.[1] A total of 22% of all urinary tracts stones are found in the ureter of which 68% are seen in the distal ureter.[2] Symptomatic ureterolithiasis is one of the important issues that urologists face in their clinical settings. The goal of the treatment of ureteral calculi is to achieve complete stone clearance with minimal morbidity. At present, multimodalities of treatment are available but none of them are risk-free. Ureteral calculi of any size may be associated with renal obstruction and care must be taken to prevent irreversible kidney damage, whether by expectant or active treatment.[3] Medical expulsive therapy has now become an established modality of treatment and it employs the use of various drugs acting on the ureter by different mechanisms.[4] The physiology of the ureter and the changes that occur with ureteral obstruction have been well studied.[5] The wall of the ureter contains

smooth muscle cells with α1-adrenergic receptors, especially in the distal third. Blocking these receptors reduces basal smooth muscle contraction and produces propulsive antegrade peristalsis, which aids in stone expulsion.[6] In general, the intramural detrusor tunnel is the principal barrier to the transport of lower ureteral stones, hence inhibiting these receptors might facilitate stone passage.[7,8] Tamsulosin, an alpha1-adrenergic antagonist it has an inhibitory effect on alpha1A receptors in relaxing prostatic and bladder neck smooth muscles[9], it has also effect on alpha adrenoceptors of ureteric smooth muscles in facilitating expulsion of stone from its juxtavesical part.[6] Tadalafil, a novel PDE5 inhibitor, has recently developed, acting on the nitric oxide-cyclic guanusin monophosphate-signaling pathway of smooth muscles, resulting in higher levels of cyclic guanusin monophosphate and ureteric relaxation.[4] As a result, combining tadalafil with tamsulosin promotes ureteric stone removal while also significantly reducing discomfort, using fewer analgesics, and requiring fewer hospital visits.[1] We can produce improved ureteric relaxation and lower intramural pressure by combining medications that work through distinct mechanisms, which will assist stone transit.

Methods:
Total 152 cases were selected purposively according to selection criteria from the patients attending urology Out-Patients Department (OPD) of Sir Salimullah Medical College Hospital (SSMCH), Dhaka with lower ureteral stone during the period from May 2015 and April 2016. Group-A was comprised of 76 cases and group-B of 76 cases. Patients of Group-A were given Tamsulosin 0.4mg daily and patients of Group-B were given Tamsulosin 0.4mg daily along with the Tadalafil 10mg daily. Each of the patients continues the therapy was follow-up weekly until stone expulsion or for 4weeks. All patients of both groups were asked during weekly follow-up about stone expulsion time, episodes of colic, analgesic use, and side effects of drugs. Results were reviewed and analyzed with the help of SPSS-17.

Results:
The mean age was found 33.74±11.52 years in Group A and 37.37±11.74 years in Group B which was not significant (p=0.07) between the two groups in an unpaired t-test. The majority of patients was male (Table-I).

Table-I: Age and gender distribution of the patients in study groups (n=140)

	Group A (n = 70)		Group B (n = 70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Age (Years)							
16-25	24	34.3	12	17.1	36	25.7	
26–35	22	31.4	22	31.4	44	31.4	
36–45	12	17.1	20	28.6	32	22.9	0.07^{ns}
46–55	10	14.3	12	17.1	22	15.7	
56–65	2	2.9	4	5.8	6	4.3	
Mean±SD Range (min – max)	33.74±11.52 (18 – 65)		37.37±11.74 (18 – 60)		35.56±11.73 (18 – 65)		
Sex							
Male	46	65.71	44	62.86	90	64.29	
Female	24	34.29	26	37.14	50	35.71	0.73^{ns}
Total	70	100.0	70	100.0	140	100.0	

ns = Not significant (p>0.05)

Clearance of stone occurred in 65.7% patients of group A and 82.9% of group B which was significantly (p<0.01) more in group B. Mean stone size in Group A and Group B was 6.8±1.2 mm and 7.1±1.4 mm respectively. The difference was not statistically significant (p=0.18). Mean expulsion time of stone in Group A and Group B was respectively 11.2±6.2 days and 8.5±4.2 days indicating that stone expulsion time was significantly less (p<0.05) in group B (Table-II).

Table-II: Stone expulsion rate, stone size and expulsion time in two study groups (n=140)

Stone expulsion	Group A (n=70)		Group B (n=70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Stone expulsion rate	46	65.7	58	82.9	104	74.3	0.01[s]
Stone size (mm) Mean±SD	6.8±1.2		7.1±1.4				0.18[ns]
Stone expulsion time (days) Mean±SD	11.2±6.2		8.5±4.2				0.03[s]

[s] = Significant (p<0.05), [ns] = Not significant

Mean episodes of pain in patients of Group A and Group B were respectively 1.34±1.1 and 0.46±0.60; the difference was statistically significant (P<0.05) (Table-III).

Table-III: Pain and urinary tract infection among the two study groups (n=140)

Stone expulsion	Group A (n=70)		Group B (n=70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Pain episodes (Number) Mean±SD	1.34±1.1		0.46±0.60				<0.001[s]
Urinary tract infection	31	44.3	20	28.6	51	36.4	0.04[s]

[s] = Significant (p<0.05)

Table-III depicted that urinary tract infection significantly more occurred in Group A (44.3%) patients than group B (28.6%) (P=0.04). The mean analgesic number was observed (2.25±0.60 vs 1.44±0.55) in group A and group B respectively. There was a significant difference between group A and group B in terms of the number of analgesic use (p=<0.001) (Table-IV).

Table-IV: Frequency of analgesic use between two study groups (n=140)

Frequency of analgesic use	Group A (n=70)		Group B (n=70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Used	58	82.9	35	50.0	93	66.4	
Not used	12	17.1	35	50.0	47	33.6	<0.001[s]
Total	70	100.0	70	100.0	140	100.0	
Mean number of analgesic use (Mean±SD)	2.25±0.60		1.44±0.55				

[s] = Significant (p<0.05)

Table-V demonstrated the drug-related adverse effects, such as headache, dizziness, and back-ache occurred more in group B but retrograde ejaculation occurred more in group A. They were not significant enough to exclude them from the study (p>0.05).

Table-V: Comparison of adverse effects between two study groups (n=140)

Adverse outcomes	Group A (n=70)		Group B (n=70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Headache	9	12.9	13	18.6	22	15.7	0.35[ns]
Dizziness	8	11.4	12	17.1	20	25.6	0.33[ns]
Backache	7	10.0	13	18.6	20	25.6	0.15[ns]
Retrograde ejaculation	9	7.1	4	5.7	14	6.4	0.73[ns]

[ns] = Not significant

Table-VI: Frequency of ureteroscopic intervention in two study groups (n=140)

Ureteroscopic intervention	Group A (n=70)		Group B (n=70)		Total (n=140)		p-value
	Number	%	Number	%	Number	%	
Yes	24	34.3	12	17.1	36	25.7	0.01[S]
No	46	65.7	58	82.9	104	74.3	

[S] = Significant (p<0.05)

Discussion:

This prospective study was performed to compare the outcome of Tamsulosin and Tamsulosin plus Tadalafil in the management of lower ureteric stone having a size up to 8 mm. A total of 152 patients were grouped into two on an alternate basis, 76 patients in group A treated with Tamsulosin only 76 patients in group B were given Tamsulosin 0.4mg daily plus Tadalafil 10mg daily. Therapies in both groups continued for 4 weeks or until stone expulsion which came first. In this study, the age distribution of the patients was above 18 years. In group A, the age range was 18 to 65 years with a mean age of 33.74 years. In group B, the age range was 18 to 60 years with a mean age of 37.37 years and mean age was 35.56 years. There was no significant difference (P>0.05) in age among the groups.In a study conducted by Kumar,[4] mean age was reported 32.45±9.36 years in a group treated with Tamsulosin and 35.23±13.54 years in Tamsulosin plus Tadalafil in combination with Prednisolone group for lower ureteric stones which were similar with this study. In group A, there were 65.71% male and 34.29% female patients and in group B male and female patients were 62.86% and 37.14% respectively. The sex distribution of the study population did not have a significant difference between the groups. In group A, the male and female ratio was 2:1, and that in group B was 1.70:1. In this study, the mean stone size was 6.8±1.2 mm (range 5-8) for group A and 7.1±1.4 mm (range 5-8) for group B. There was no statistically significant difference between the two groups with respect to stone size.The above distribution correlates with the study done by Cervenakov.[10] It is evident from the study that the stone expulsion rate is higher in group B compared with group A which is 65.7% and 82.9% respectively (p<0.05). This is consistent with the study conducted by Jayant1 where the stone expulsion rate was 65.5% in the Tamsulosin group and 83.6% in the group where Tamsulosin was supplemented by Tadalafil. Similarly,in another study conducted by Kumar[4], Tamsulosin plus Tadalafil in a combination group showed 83.9% stone expulsion in comparison to 74.2% stone expulsion in a group treated with only Tamsulosin. In this study, the average time for stone expulsion was 11.2±6.2 days in group A and 8.5±4.2 days in group B. A significant statistical difference was observed in expulsion time between group A and group B (p<0.05). The expulsion time of this study correlates with the study done by Jayant[1] where expulsion times were 9.9±4.4 days and 11.7±4.8 days respectively with or without Tadalafil. But expulsion time of lower ureteric was significantly less in the study conducted by Dellabella[6] where the average expulsion time was 111.1 hours in a group of patients who did not take tamsulosin and 65.7 hours in the group treated by Tamsulosin. In that study, less expulsion time may be due to the use of steroids in both groups in addition. The steroid-sparing approach is another important feature of this study.Episodes of pain in this study were statistically significantly lower in group B patients compared to group A (<0.05). Mean episodes of pain in group A was 1.34±1.1 and that in group B was 0.46±0.60. Patients in the studies of Jayant[1] and Kumar[4] suffered from the same pain episodes of 1.60±1.00 and 0.45±0.68 without and with Tadalafil respectively. In this study, although patients with urinary tract infections were excluded from the study some were encountered with these events during the study period. Urinary tract infections were encountered in 44.3% patients of group A and 28.6% patients of group B during 4 weeks of therapy and were treated with appropriate antibiotics. The difference was statistically significant (p<0.05). The above findings correlate with different studies conducted by Jayant[1] and Kumar[4].The reported side-effect was mild to moderate and was well tolerated in the present study, probably because of the younger study population and the lack of any associated co-morbidity. In this study, 34.3% group A patients and 17.1% group B patients needed hospitalization because of unsuc-

cessful stone expulsion after 4 weeks of treatment. A statistically significant difference was observed between the two treatment groups in relation to the need for hospitalization for ureteroscopy. In the study by Yilmaz[11] 46.43%of patients of the conventional therapy group and 20.79%of patients treated by additional Tamsulosin were not stone free at the end of 4 weeks of therapy and treated by ureteroscopy or ESWL which was similar with this study. But Dellabella[6] showed in their study 100% of the patients who were treated with Tamsulosin were stone-free at end of 4 weeks of therapy while 70% of patients were stone-free in that group who treated by conventional therapy which was probably due smaller stone size.The current study found that combining Tadalafil with Tamsulosin greatly boosts stone evacuation, as well as considerable pain management, significantly decreased analgesic use, and fewer hospital visits.

Conclusion:

This study showed a potentially important role of Tamsulosin and Tadalafil for conservative expulsive therapy of lower ureteral stones, broadening pharmacological indications rather than endoscopic treatments for the resolution of this disease. As medical expulsive therapy for lower ureteric stones Tamsulosin plus Tadalafil therapy is more effective than Tamsulosin alone. Source of funding: Self

Conflict of interest: None

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Review Article

COVID-19 Pandemic and Mental Health of Medical Students

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Abstract
COVID-19 has resulted in significant morbidity, mortality, and adverse psychological impact throughout the world. The government of Bangladesh imposed lockdown and quarantine at the early stage of the outbreak to prevent the spread of the virus, which impacted people's daily life and health, especially on students including medical students which affected their academic and educational activities. During the COVID-19 pandemic, there was an increased prevalence of anxiety, fear, depression, sleep disturbance, somatization, and OCD disorders among medical students. So, it is very important to have a routine screening of depression, anxiety, and stress among medical students and it is recommended that measures be taken to protect them from the debilitating consequences of mental disorders and reduce anticipated adverse effects of the pandemic.
Keywords: Covid-19, Mental health, Medical students.

Introduction:

Since its first outbreak at the end of December 2019 in Wuhan-China, the coronavirus (SARS-COV-2) has spread worldwide to affect more than 346 million confirmed cases and over 5.5 million deaths have been reported worldwide.[1] The disease was then declared a pandemic by the World Health Organization (WHO) on 11 March 2020.[2,3] For its highly contagious nature and the rising death toll among the general population, many countries have locked down and quarantined their population to control the spread of the disease. These restrictive measures were showing effectiveness although many concerns have emerged regarding their psychological impact and their effect on the mental wellbeing of the general population, especially those with high vulnerability to mental health diseases.[4] In Bangladesh, the first case of COVID-19 was confirmed on 8 March 2020. Being a country of limited resources in the healthcare setting, the authorities imposed a countrywide lockdown to lessen its infection.[5] During the COVID-19 pandemic, however, students' psychological health becomes a concern of interest as all the educational institutions were closed down, and their social circle, communication, and interaction processes were also changed.[6] The Covid-19 pandemic has aggregated mental health sufferings throughout the entire world. Committing suicide is the extreme consequence of Covid-19 related psychological burdens, which were reported in many countries including Bangladesh.[7] However, there is a lack of study assessing COVID-19 related human stress among medical students and its associations with other relevant factors affecting the quality of life in the country, which were explored in the present study.

COVID-19 has caused extensive distress in the lives and mental health of medical students. Numerous studies conducted in various parts of the world highlighted that the recent COVID-19 pandemic further negatively impacted the mental health of this population.[8] Since its outbreak, epidemiological data in Bangladesh has revealed

adverse mental health issues due to the COVID-19 pandemic and mass isolation are prominent. Early on in the pandemic, one contributing factor to these mental health implications for Bangladeshis was found to be fear. Studies have reiterated that worries and fears associated with COVID-19 for Bangladeshi samples are associated with increased COVID-19 anxiety, generalized anxiety, depression, and lower mental well-being. Thus, altogether, showing to some extent how the pandemic can impact Bangladeshis psychologically.[9]

Review:

Common mental health disorders among medical students of Bangladesh during the COVID-19 Pandemic:

Adverse mental health outcomes were reported in a systematic review where 50.9% anxiety, 48.3% depression, 53.8% post-traumatic stress disorder, 38% psychological distress, and 81.9% stress were found among the medical students globally, as consistent with other literature concerned with either multi-centered cross-sectional studies, or systematic reviews. Female medical students had relatively more (1.6 times) anxiety and depressive symptoms than males. These devastating issues are alleged for subsequent suicide occurrences globally including Bangladesh.[10]

Depression:

The prevalence of depression was ranging from 46.92% to 82.4% among both college and university students respectively reported in previous studies.[10] However, studies considering the university students found the rate to be within 72% to 82.4%, whereas 49.9% was reported for medical students.[11]

Anxiety:

COVID-19 related anxiety was reported in many studies. Different levels of anxiety were reported to the amount of the medical students (65.9%), ranging from mild (27.3%), moderate (26.8%), and severe (11.8%).[10] Within the university students, the anxiety rate was noted to be 40% to 96.82%.[11]

Stress and psychological distress:

Some studies found the prevalence of stress within 28.5% to 70.1%.[6,10] Previous studies reported the lowest stress prevalence rate among college and university students, whereas university students were identified as dominantly stressed and 57.05% of the medical students were suffering from stress.[12] There was the loss of daily routine in medical students. Less physical activity may lead to boredom and frustration, precipitating psychological distress. Medical college students seem to have been hit hard with their educational institution closed. Some studies have been found possible psychiatric manifestations among medical students during the Covid-19 pandemic.[13]

Suicide:

Commission of suicide is the extreme consequences of Covid-19 related psychological burdens, which were reported in many countries including Bangladesh. A study found 26 worldwide Health Care professionals COVID-19-related suicide cases (aged 22–60 years; 14 females; most of the cases from India). The cases comprised doctors, nurses, paramedics, and one medical student. Being infected with the COVID-19 was the most common reason for suicide, followed by work-related stress, and fear related to COVID-19 infection/transmission. Among the eight cases diagnosed with COVID-19, most were female and either doctors or nurses.[14]

Influencing factors associated with Mental Disorders:

Age and gender:

Previous studies reported age as a significant risk factor for psychological suffering. They found that medical students less than or equal 22 years were at higher risk of depression, anxiety, and stress, respectively. Whereas, 21 to 24 years old medical students were observed to be prone to these disorders.[15]

The relationship between gender and mental disorders was significant in a total of 4 studies, where all but one study found females to be at higher risk of developing depression, anxiety, and stress.[11]

Low family income and urban residence:

Low family income was significantly associated with increasing the risk of mental health disorders.[15] A significant adverse mental health effect was observed at the student's place of residence. A study depicted residing in urban areas were higher risk of depression and anxiety compared to those in rural areas.[25] Besides this, other studies reported people living in urban areas were more vulnerable to psychological problems.[16]

Factors related to family:

The number of family members was found inversely significant for developing mental health disor-

ders. A previous study reported that students who had a family size less than or equal to 4 were at higher risk of anxiety and depressive symptoms than family size greater than four.[17] Another study found that having more than or equal to five family members compared to less than four family members was more prone to mental disorders.[18] The number of children in the family was identified as a risk factor for mental health problems. The study found that students from these families with children under 5 years were at higher risk of developing depressive symptoms.[19] Living with family or parents was also found to increase the risk of psychological suffering. Participants who reported currently living with their family were at 2.6 and 1.8 times higher risk of depression and anxiety, respectively.[20]

Factors related to lifestyle:

Smoking habit was reported as a significant factor for evaluating mental health problems. Studies found that students who were smokers were more prone to psychological sufferings compared to those who were not.[21] Physical exercise was found as a significant predictor of mental health during this pandemic. Based on two studies, students who reported not engaging in physical exercise were at higher risk of mental disorders.[22] Internet browsing time was found as a predictive factor of developing psychological disorders in a study that showed that students reporting internet browsing for 5 to 6 hours, and more than 6 hours compared to less than 2 hours were at higher risk of developing psychological problems.[23] Having sleep difficulties could also influence the higher risk of mental health problems. A study claimed that students reporting dissatisfaction with their sleep experienced higher psychological sufferings compared to those who had good sleep.[24]

Online teaching:

In the lockdown situation, online teaching, a newly introduced methods of teaching can be unfavorable for a higher number of students as of difficulties related to understanding materials, technical issues, lack of interest in attending classes, limited access to online teaching materials, and so forth. The severity of lack of willingness in online learning led to psychological disturbance was evident in Bangladesh. That is, an undergraduate student refused to partake in online teaching and examinations, which turned into conflicts within their family.[25,26]

COVID-19 Related Risk Factors:

The perceptions about the negative impact of the COVID-19 pandemic were reported as the influential factors of psychological suffering included (i) normal life disrupted by the COVID-19 pandemic, (ii) negatively affecting themselves by the COVID-19 pandemic, (iii) the country's healthcare system would be overrun and people would not be able to get proper medical care, (iv) the trajectory of COVID-19 suspicion, (v) its negative impact on education like lagging academically, worrying about the effects of COVID-19.[25]

Fear of getting infected by the COVID-19 was found as a significant predictor of depression, anxiety, and stress in a couple of studies; whereas relatives or friends who were being infected with the COVID-19 had also increased the level of anxiety. [23,24,26] Recent studies reported that students severely tensed of being contacted with the COVID-19 infected individuals were at 3.5 and 2.75 times higher risk of being anxious and depressed respectively than the students who had no or minimal contract. Similarly, contact with the confirmed COVID-19 cases was reported to be at 4 and 3.17 times higher risk of getting stressed and anxious, respectively.[27]

Mental health sufferings were also increased when students reported experiencing the COVID-19 related symptoms. It is reported that experiencing one and more symptoms and at least one symptom increased the risk of stress by 1.60 and 3.06 times; whereas it was 3.02 and 4.96 times, respectively, for anxiety. Also, another study found having the symptoms of fever, dry cough, fatigue, sore throat, difficulty breathing as the influential factors of mental disorders.[28]

Other Risk Factors:

Losing part-time teaching job as a tutor, lack of concentration on the study, being agitated more easily, fear of getting assaulted or humiliated on the way to the hospital or home, worsening their financial condition, being dissatisfied with academic studies having an inadequate food supply, being more exposed to the COVID-19 news in social media and mass media, being more active in recreational activities like watching TV series, reading storybooks, online and offline gaming, etc, engaging in household chores, etc were reported to be associated with the development of psychological sufferings.[29]

Measures to overcome mental disorders at Covid pandemic:[30]

It is normal to feel sad, stressed, confused, scared, or angry during a pandemic. Talking to people with one trust, contact with friends and family will help. Avoiding smoking, alcohol or other drugs to deal with emotions is mandatory. Need to talk to a health worker or counselor during overwhelmed feelings and have a plan, where to go to and how to seek help for physical and mental health needs if required. Get the facts; gather accurate information that will help to determine the risk so that one can take reasonable precautions. To find a credible source one can trust such as the WHO website or, a local or state public health agency. Limit worry and agitation by lessening the time watching or listening to media coverage that perceives as upsetting. Maintain a healthy lifestyle - including proper diet, sleep, exercise, and social contacts with loved ones at home and by email or phone with other family and friends. Draw on skills used in the past that have helped to manage previous life's adversities and utilize previous experiences and skills to manage emotions during the challenging time of this outbreak.

Conclusion:

During the pandemic outbreak, the level of anxiety and depression of medical students goes up. It is essential to introduce a time-oriented policy to screen and monitor of mental health of medical students and implement care monitoring plans to combat the mental health adversities, which may help in managing the pandemic as well as nurturing the public mental health to combat COVID-19 related psychological challenges.

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Case Report

Successful Outcome of Myomectomy in Early Pregnancy: A Case Report

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Abstract
Fibroid in pregnancy is not a rare condition but sometimes become complicated when these need surgical intervention, though the basic principle of management of fibroid with pregnancy is not to do anything to the fibroid whenever possible. However a tricky mixture of surgical intervention with pharmacological therapy & regular follow up can lead to a success. Accurate diagnosis, which may be quite confusing in earlier months of pregnancy where a fibroid can be diagnosed but pregnancy, may be missed. We are describing a case of successful continuation of pregnancy of a young woman with a large fundal sessile sub-serous fibroid which became impacted in pouch of douglas at 9 weeks of pregnancy causing acute retention of urine & severe pain in lower abdomen, creating some inevitable circumstances that the lady could go through a miscarriage. At that time, courageous decision of doing the myomectomy with support of progesterone therapy onwards seems to be accurate for the cases. Though current evidence does not suggest routine myomectomy during early pregnancy, but it should be done where indicated for the better outcome of both mother & fetus. For last four years she is on regular follow up and at present (December, 2021) she is five months pregnant.
Keywords: Fibroid, myomectomy, progesterone therapy, pregnancy

Introduction:

Uterine leiomyoma are the commonest benign tumors of the female genital tract with a prevalence varying from 20-50% in women of reproductive life.[1] Incidence of leiomyoma is unknown but reported rates varies from as low as 0.1% to 12.5%. pregnancies.[2] Surgical management of uterine myoma by myomectomy is limited in pregnant uterus - because of the risk of severe haemorrhage and miscarriage.[3] However in last three decades there have been increasing report of successful myomectomy during cesarean section.[3] Successful emergency and elective myomectomy especially during early pregnancy have been reported[4,5] The management of leiomyoma during pregnancy is medical but in rare circumstances surgical intervention and myomectomy may be needed.[6]

Case Report:

A 28 years old non hypertensive non diabetic primigravid, from middle class family, qualified (Masters degree) and service holder women got admitted in Rangpur Medical College Hospital (RpMCH), Rangpur on 13th August 2017 at 12.30 am having 9wks + 4 days of pregnancy with the complaints of – severe pain in lower abdomen for 24 hours associated with acute retention of urine for same duration and difficulty in defecation According to her statement her menstrual cycle was regular and had no significant menorrhagia and dysmenorrhoea. She was married for 8 months. Her LMP was on 02/06/2017 and EDD on 09/03/2018.

Pregnancy was uneventful up to 8 weeks of gestation. At 8 wks onwards she developed lower abdominal pain which was continuous, dull aching in nature, gradually increased in intensity, associated with vomiting for several times but no dysurea, neither difficulty in micturation or defecation during onset which last for 7 days. Twenty four hours before admission, pain became severe & associated with acute retention of urine & difficulty of defecation. She had no per vaginal bleeding.

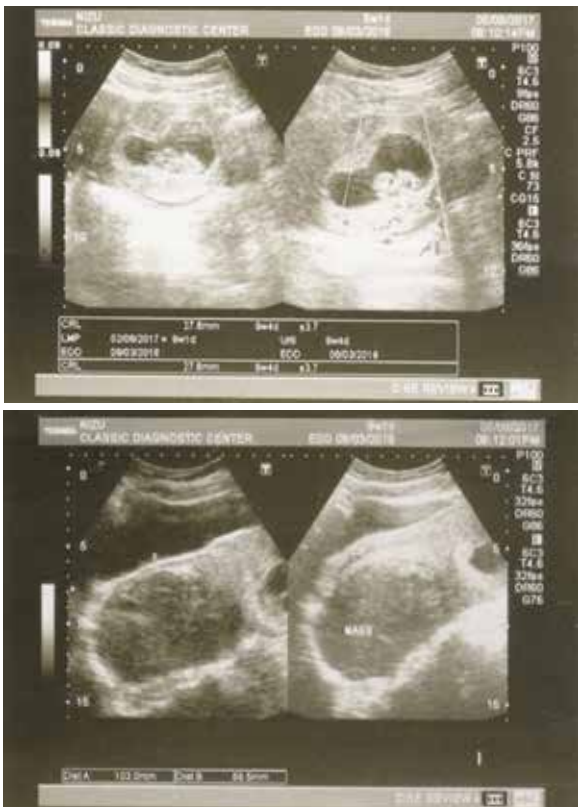


Figure-1: Ultrasonogrphic pregnancy and mass within the uterus

She is a known case of asthma for 3 yrs and on regular medication for this, and has no history of heat and cold intolerance. She had a history of appendicectomy 5 yrs back but no other significant past medical, surgical and gynecological history. She had no family history of DM, TB and HTN.

She was immunized duly according to EPI schedule and with 5 doses of tetanus toxoid.

After proper counseling and maintaining adequate privacy, general physical examination was done she was anxious, ill looking but cooperative, mild to moderately anemic, pulse 80 beats/ min, B.P 100/60 Hg, temp-normal, thyroid gland not enlarged, no lymph nodes were palpable and breast showed normal pregnancy changes. Per abdominal examination revealed no lump and uterus was not palpable. Gentle, aseptic, pelvic examination revealed cervix soft, os closed, uterus >10 wks size (approximately), fornices were free. There was a firm, irregular, tender lump of about >15X15cm impacted in Pouch of Douglas (POD). Digital rectal examination (DRE) corroborates the same findings.

Investigation reports were as follows:

Hb% - 9gm/dl. Urine for R/M/E- no albuminuria, no reducing sugar, no pus cells/HPF. FBS and PPBS were within normal range.

Pelvic sonography (Trans abdominal) showed an intrauterine pregnancy of single live fetus of 9 wks + 4 days (CRL:27.6mm) with pelvic mass lesion, (103x68mm) posterior to the cervix may be sub serous fibroid/solid ovarian tumor.

Management:

Initially she was treated on admission by analgesics, antispasmodics, & indwelling intra vesicle self retaining folleys catheter (no.14) Definite treatment: She was counseled for myomectomy on account of distressing abdominal pain & vomiting, associated with large impacted myoma in POD due to no improvement of her symptoms in spite of medical therapy.

Pre-operative preparations:

The risk of per-operative hemorrhage and possibilities of spontaneous abortion following procedure was explained to her. Informed written consent was taken from her legal guardian. One unit fresh cross matched blood was transfused in preoperative period and also one unit per operatively.

Per-operative findings:

Abdomen was opened by lower vertical midline incision with all aseptic precautions, under regional anesthesia (SAB) . The findings at surgery were : a large >15X15cm (approximately) intramural and sub serous sessile myoma on the fundus impacted in the POD and a smaller one 4X4 cm (approximately) on the anterior wall of uterus. Both the ovaries and fallopian tubes were seems to be normal.



Figure-2: Pregnant uterus and leiomyoma on laparotomy



Figure-3: Pregnant uterus and leiomyoma on laparotomy

After disimpacting by fingers, myoma (larger one) was enucleated by transverse incision over the fundus on anterior surface below the meeting points of two cornu rapidly and carefully using blunt and sharp dissection. Small one was enucleated by vertical incision. Following enucleation, haemostatic measure was carefully carried out. Uterine cavity was not opened, gestational sac was not disturbed. Total time taken from draping to skin closure was 45 minutes. Blood loss was minimum less than 500ml. An intra-abdominal drain tube was placed after peritoneal washing with normal saline and it was removed on 2nd postoperative day. Tissue was sent for histopathology. The histopathology report was leimyoma.



Figure-4: Cut section of leimyoma

Post-operative management:
Intramuscular hydroxyprogesterone caproate (Proluton Depot) 500mg stat and rest, 250 mg twice in a week for 4 weeks postoperatively followed by oral progestins in the formulation of micronized progestin 200mg twelve hourly till delivery.Antibiotics, analgesics, uterine tocolytics were also prescrived. Bed side USG (trans-abdomial) was carried out 48 hours after surgery to evaluate the fetal viability.

Follow up:
She had an uneventful postoperative period and was discharged at home on 14th postoperative day for collecting histopathology report after she was registered for antenatal care.Obstetric ultrasound scan was done at 13 weeks of pg. at 23 wks + 3 days for anomaly scan, both were found normal.Oral Progestins is prescribed till delivery, in addition iron, vitamins, calcium & folate supplementation & ventoline evohaler for her asthma were prescribed.



Figure-5: Ultrasonography at 23 weeks of pregnancy

Obstetrical outcome:

She was advised for having antenatal corticosteroid at 28 weeks of gestation according to WHO schedule and also for getting admission at 38 wks for elective cesarean section if no problem arising before that. On 38 weeks 4 days, she was admitted in a tertiary care hospital and gave birth to a healthy male baby of 3.3 kg by elective LSCS. Her post operative period and peurperium was uneventful. Baby is living a healthy life without any anomalies or complications. Four years follow up showed currently (December2021) she is again pregnant of 5 months with her 2nd baby, without any ovulation inducing drugs or assisted reproductive techniques. She is under regular antenatal checkup. She is also vaccinated against Covid-19 for two doses.



Figure-6: New born baby on ceaserian section

Discussion:

In majority of pregnancies with co-existing myomas, there may be no complications. However in 10-30% of cases, complications may arise - includes spontaneous abortion, pre-labor rupture of membrane, preterm labor, postural deformities, dysfunctional labor, primary PPH and retained placenta, red degeneration of myoma , pressure effect on the adjacent organs.[2,7-9] The management of uterine fibroid during pregnancy is medical but in rare circumstances surgical intervention like myomectomy may be needed.6 Myomectomy on a non pregnant uterus involves the use of tourniquet, clamps or oxytocic to reduce blood supply to uterus and thus reduce blood loss during surgery. None of those could be done in this case because of the developing fetus in utero. The two major complications of myomectomy in pregnancy are abortion and severe bleeding and these have disturb feto-maternal consequences , which are taken care in this case by avoiding usual myomectomy methods & pharmacological progesterone therapy, mentioned above. The role of counseling and informed written consent before myomectomy in pregnancy therefore cannot be overemphasized. Appropriate surgical skills and speed were the major consideration to limit blood loss as massive blood loss has been reported as inevitable complications of myomectomy in pregnancy.[8]

Our patient had a myomectomy with minimum blood loss less than 500 ml & total operative time was 45 minutes. The early gestational age of this pregnancy and hence less uterine vascularization at this stage and the hyper-coagulability in pregnancy may have contributed to the hemostasis achieved in this case.

Though current evidence does not suggests routine myomectomy during pregnancy specially in early pregnancy, but it should be done in selected cases with proper precaution and care, where there is a compelling indication for the better outcome of both mother and fetus.

Conclusion:

Decision to perform a myomectomy during early pregnancy was based on severity of the symptoms, size and site of the fibroid was a success to relieve the symptoms and to prevent abortion also. Therefore in patients like ours a timely and judicious myomectomy option was offered to our patients, avoiding morbidity and mortality associated with emerging procedure. As a result which we had a successful outcome for both mother and fetus

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